880GMA-E45/ 785GMA-E45/ 880GMU-E35/ 785GMU-E35 series

MS-7623 (v3.x) Mainboard

G52-76231X7

Copyright Notice

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Revision History

Revision	Revision History	Date
V3.0	First release	March 2010

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for FAQ, technical guide, BIOS updates, driver updates, and other information: ***http://www.msi.com/index.php?func=service***
- Contact our technical staff at: ***http://ocss.msi.com***

Safety Instructions

- Always read the safety instructions carefully.
- Keep this User's Manual for future reference.
- Keep this equipment away from humidity.
- Lay this equipment on a reliable flat surface before setting it up.
- The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.
- Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
- Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
- Always Unplug the Power Cord before inserting any add-on card or module.
- All cautions and warnings on the equipment should be noted.
- Never pour any liquid into the opening that could damage or cause electrical shock.
- If any of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well or you can not get it work according to User's Manual.
  - The equipment has dropped and damaged.
  - The equipment has obvious sign of breakage.

  DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60°C (140°F), IT MAY DAMAGE THE EQUIPMENT.

CAUTION: Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

警告使用者:

這是甲類資訊產品，在居住的環境中使用時，可能會造成無線電干擾，在這種情況下，使用者會被要求採取某些適當的對策。

廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling special disposal.

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the measures listed below.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

WEEE (Waste Electrical and Electronic Equipment) Statement

ENGLISH

To protect the global environment and as an environmentalist, MSI must remind you that...

Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal waste anymore and manufacturers of covered electronic equipment will be obligated to take back such products at the end of their useful life. MSI will comply with the product take back requirements at the end of life of MSI-branded products that are sold into the EU. You can return these products to local collection points.

DEUTSCH

Hinweis von MSI zur Erhaltung und Schutz unserer Umwelt

Gemäß der Richtlinie 2002/96/EG über Elektro- und Elektronik-Altgeräte dürfen Elektro- und Elektronik-Altgeräte nicht mehr als kommunale Abfälle entsorgt werden. MSI hat europaweit verschiedene Sammel- und Recyclingunternehmen beauftragt, die in die Europäische Union in Verkehr gebrachten Produkte, am Ende seines Lebenszyklus zurückzunehmen. Bitte entsorgen Sie dieses Produkt zum gegebenen Zeitpunkt ausschliesslich an einer lokalen Altgerätesammelstelle in Ihrer Nähe.

FRANÇAIS

En tant qu'écologiste et afin de protéger l'environnement, MSI tient à rappeler ceci...

Au sujet de la directive européenne (EU) relative aux déchets des équipement électriques et électroniques, directive 2002/96/EC, prenant effet le 13 août 2005, que les produits électriques et électroniques ne peuvent être déposés dans les décharges ou tout simplement mis à la poubelle. Les fabricants de ces équipements seront obligés de récupérer certains produits en fin de vie. MSI prendra en compte cette exigence relative au retour des produits en fin de vie au sein de la communauté européenne. Par conséquent vous pouvez retourner localement ces matériels dans les points de collecte.

РУССКИЙ

Компания MSI предпринимает активные действия по защите окружающей среды, поэтому напоминаем вам, что....

В соответствии с директивой Европейского Союза (ЕС) по предотвращению загрязнения окружающей среды использованным электрическим и электронным оборудованием (директива WEEE 2002/96/EC), вступающей в силу 13 августа 2005 года, изделия, относящиеся к электрическому и электронному оборудованию, не могут рассматриваться как бытовой мусор, поэтому производители вышеперечисленного электронного оборудования обязаны принимать его для переработки по окончании срока службы. MSI обязуется соблюдать требования по приему продукции, проданной под маркой MSI на территории ЕС, в переработку по окончании срока службы. Вы можете вернуть эти изделия в специализированные пункты приема.

ESPAÑOL

MSI como empresa comprometida con la protección del medio ambiente, recomienda:

Bajo la directiva 2002/96/EC de la Unión Europea en materia de desechos y/o equipos electrónicos, con fecha de rigor desde el 13 de agosto de 2005, los productos clasificados como “eléctricos y equipos electrónicos” no pueden ser depositados en los contenedores habituales de su municipio, los fabricantes de equipos electrónicos, están obligados a hacerse cargo de dichos productos al termino de su período de vida. MSI estará comprometido con los términos de recogida de sus productos vendidos en la Unión Europea al final de su periodo de vida. Usted debe depositar estos productos en el punto limpio establecido por el ayuntamiento de su localidad o entregar a una empresa autorizada para la recogida de estos residuos.

NEDERLANDS

Om het milieu te beschermen, wil MSI u eraan herinneren dat….

De richtlijn van de Europese Unie (EU) met betrekking tot Vervuiling van Electrische en Electronische producten (2002/96/EC), die op 13 Augustus 2005 in zal gaan kunnen niet meer beschouwd worden als vervuiling. Fabrikanten van dit soort producten worden verplicht om producten retour te nemen aan het eind van hun levenscyclus. MSI zal overeenkomstig de richtlijn handelen voor de producten die de merknaam MSI dragen en verkocht zijn in de EU. Deze goederen kunnen geretourneerd worden op lokale inzamelingspunten.

SRPSKI

Da bi zaštitili prirodnu sredinu, i kao preduzeće koje vodi računa o okolini i prirodnoj sredini, MSI mora da vas podesti da…

Po Direktivi Evropske unije (“EU”) o odbačenoj ekektronskoj i električnoj opremi, Direktiva 2002/96/EC, koja stupa na snagu od 13. Avgusta 2005, proizvodi koji spadaju pod “elektronsku i električnu opremu” ne mogu više biti odbačeni kao običan otpad i proizvođači ove opreme biće prinuđeni da uzmu natrag ove proizvode na kraju njihovog uobičajenog veka trajanja. MSI će poštovati zahtev o preuzimanju ovakvih proizvoda kojima je istekao vek trajanja, koji imaju MSI oznaku i koji su prodati u EU. Ove proizvode možete vratiti na lokalnim mestima za prikupljanje.

POLSKI

Aby chronić nasze środowisko naturalne oraz jako firma dbająca o ekologię, MSI przypomina, że...

Zgodnie z Dyrektywą Unii Europejskiej (“UE”) dotyczącą odpadów produktów elektrycznych i elektronicznych (Dyrektywa 2002/96/EC), która wchodzi w życie 13 sierpnia 2005, tzw. “produkty oraz wyposażenie elektryczne i elektroniczne “ nie mogą być traktowane jako śmieci komunalne, tak więc producenci tych produktów będą zobowiązani do odbierania ich w momencie gdy produkt jest wycofywany z użycia. MSI wypełni wymagania UE, przyjmując produkty (sprzedawane na terenie Unii Europejskiej) wycofywane z użycia. Produkty MSI będzie można zwracać w wyznaczonych punktach zbiorczych.

TÜRKÇE

Çevreci özelliğiyle bilinen MSI dünyada çevreyi korumak için hatırlatır:

Avrupa Birliği (AB) Kararnamesi Elektrik ve Elektronik Malzeme Atığı, 2002/96/EC Kararnamesi altında 13 Ağustos 2005 tarihinden itibaren geçerli olmak üzere, elektrikli ve elektronik malzemeler diğer atıklar gibi çöpe atılamayacak ve bu elektonik cihazların üreticileri, cihazların kullanım süreleri bittikten sonra ürünleri geri toplamakla yükümlü olacaktır. Avrupa Birliği'ne satılan MSI markalı ürünlerin kullanım süreleri bittiğinde MSI ürünlerin geri alınması isteği ile işbirliği içerisinde olacaktır. Ürünlerinizi yerel toplama noktalarına bırakabilirsiniz.

ČESKY

Záleží nám na ochraně životního prostředí - společnost MSI upozorňuje...

Podle směrnice Evropské unie ("EU") o likvidaci elektrických a elektronických výrobků 2002/96/EC platné od 13. srpna 2005 je zakázáno likvidovat "elektrické a elektronické výrobky" v běžném komunálním odpadu a výrobci elektronických výrobků, na které se tato směrnice vztahuje, budou povinni odebírat takové výrobky zpět po skončení jejich životnosti. Společnost MSI splní požadavky na odebírání výrobků značky MSI, prodávaných v zemích EU, po skončení jejich životnosti. Tyto výrobky můžete odevzdat v místních sběrnách.

MAGYAR

Annak érdekében, hogy környezetünket megvédjük, illetve környezetvédőként fellépve az MSI emlékezteti Önt, hogy ...

Az Európai Unió („EU") 2005. augusztus 13-án hatályba lépő, az elektromos és elektronikus berendezések hulladékairól szóló 2002/96/EK irányelve szerint az elektromos és elektronikus berendezések többé nem kezelhetőek lakossági hulladékként, és az ilyen elektronikus berendezések gyártói kötelessé válnak az ilyen termékek visszavételére azok hasznos élettartama végén. Az MSI betartja a termékvisszavétellel kapcsolatos követelményeket az MSI márkanév alatt az EU-n belül értékesített termékek esetében, azok élettartamának végén. Az ilyen termékeket a legközelebbi gyűjtőhelyre viheti.

ITALIANO

Per proteggere l'ambiente, MSI, da sempre amica della natura, ti ricorda che….

In base alla Direttiva dell'Unione Europea (EU) sullo Smaltimento dei Materiali Elettrici ed Elettronici, Direttiva 2002/96/EC in vigore dal 13 Agosto 2005, prodotti appartenenti alla categoria dei Materiali Elettrici ed Elettronici non possono più essere eliminati come rifiuti municipali: i produttori di detti materiali saranno obbligati a ritirare ogni prodotto alla fine del suo ciclo di vita. MSI si adeguerà a tale Direttiva ritirando tutti i prodotti marchiati MSI che sono stati venduti all'interno dell'Unione Europea alla fine del loro ciclo di vita. È possibile portare i prodotti nel più vicino punto di raccolta

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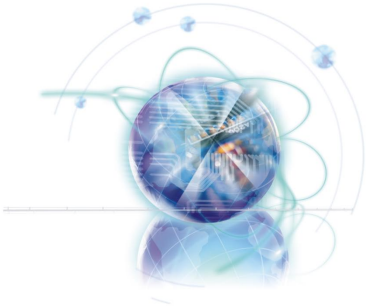


Chapter 1

Getting Started

Thank you for choosing the **880GMA-E45/ 785GMA-E45/ 880GMU-E35/ 785GMU-E35** Series (MS-7623 v3.X) Micro-ATX mainboard. The **880GMA-E45/ 785GMA-E45/ 880GMU-E35/ 785GMU-E35** Series mainboards are based on **AMD® 880G/ 785G** & **SB810/ SB850** chipsets for optimal system efficiency. Designed to fit the advanced **AMD®** processor in **AM3** package processor, the **880GMA-E45/ 785GMA-E45/ 880GMU-E35/ 785GMU-E35** Series deliver a high performance and professional desktop platform solution.

Mainboard Specifications

Processor Support

- AMD® PhenomII/ Phenom/ Althon II/ Althon/ Sempron processors in AM3 package.
  (For the latest information about CPU, please visit
  http://www.msi.com/index.php?func=cpuform2)

HyperTransport

- Supports Hyper Transport(HT) 3.0 Technology

Chipset

- North Bridge: AMD® 880G/ 785G chipset
- South Bridge: AMD® SB810/ SB850 chipset

Memory Support

- DDR3 800/ 1066/ 1333/ 1600*(OC) SDRAM (16GB Max)
- Supports Dual-Channel mode
  *(For more information on compatible components, please visit
  http://www.msi.com/index.php?func=testreport)

LAN

- Supports LAN 10/100/1000 Fast Ethernet by Realtek® RTL8111DL

Audio

- Chip integrated by Realtek® ALC892
- Flexible 8-channel audio with jack sensing
- Compliant with Azalia 1.0 Spec

IDE

- 1 IDE port by AMD® SB810/ SB850
- Supports Ultra DMA 33/66/100/133, PIO & Bus Master operation mode

SATA

- 6 SATA 6Gb/s ports by AMD® SB850 (optional)
- 6 SATA 3Gb/s ports by AMD® SB810 (optional)

RAID

- Supports RAID 0/ 1/ 0+1/ JBOD mode by AMD® SB810 (optional)
- Supports RAID 0/ 1/ 0+1/ 5/ JBOD mode by AMD® SB850 (optional)

Floppy

- 1 floppy port
- Supports 1 FDD with 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB

Connectors

- Back panel
  - 1 PS/2 mouse port
  - 1 PS/2 keyboard port
  - 1 VGA port
  - 1 DVI-D port
  - 1 HDMI port
  - 4 USB 2.0 Ports
  - 2 USB 3.0 Ports

  - 1 LAN jack
  - 6 flexible audio jacks
- On-Board Connectors
  - 4 USB 2.0 connectors
  - 1 Chassis Intrusion connector
  - 1 Parallel connector
  - 1 Serial connector
  - 1 CD-In connector
  - 1 Front Panel Audio connector
  - 1 SPDIF-Out connector
  - 1 TPM connector
  - 1 OC switch

Slots

- 1 PCI Express x16 slot
- 2 PCI Express x1 slots
- 1 PCI slot, support 3.3V/ 5V PCI bus Interface

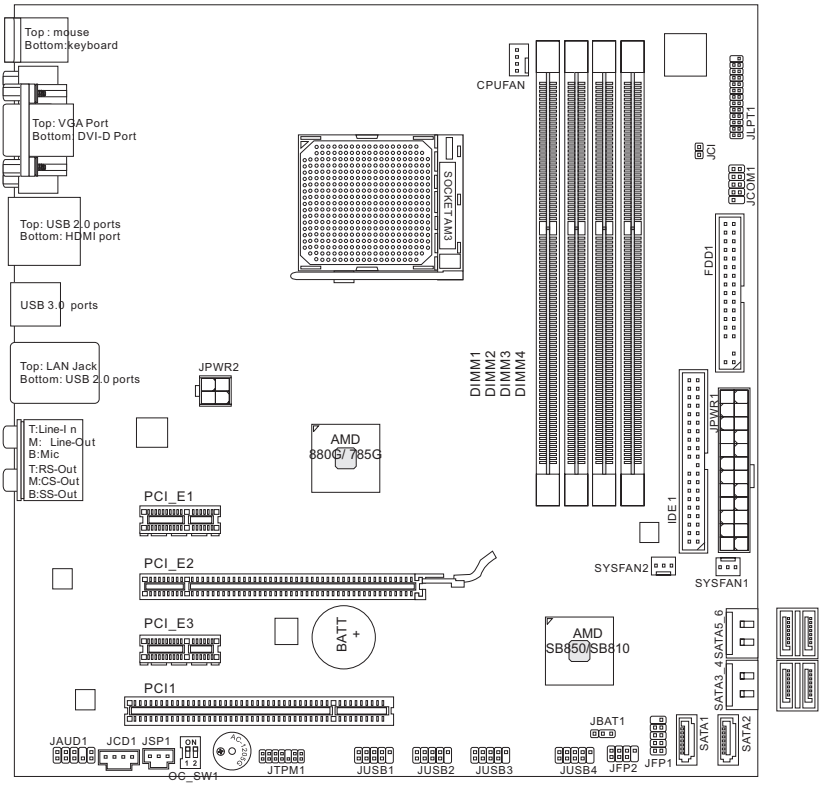
Form Factor

- Micro-ATX (23.7cm X 24.4 cm)

Mounting

- 6 mounting holes

Mainboard Layout



880GMA-E45/ 785GMA-E45/ 880GMU-E35/ 785GMU-E35 Series (MS-7623 v3.X) Mainboard

Packing Checklist

MSI mainboard

MSI Driver/Utility DVD

SATA Cable (Optional)

Power Cable

USB Bracket (Optional)

Standard Cable for IDE Devices

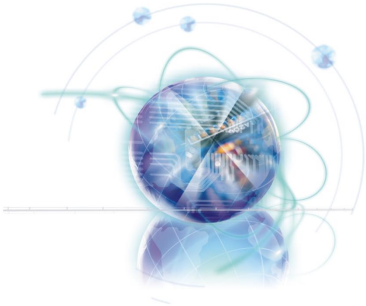
Back IO Shield

User's Guide

* The pictures are for reference only and may vary from the packing contents of the product you purchased.

* If you need to purchase accessories and request the part numbers, you could search the product web page and find details on our web address below

http://www.msi.com/index.php



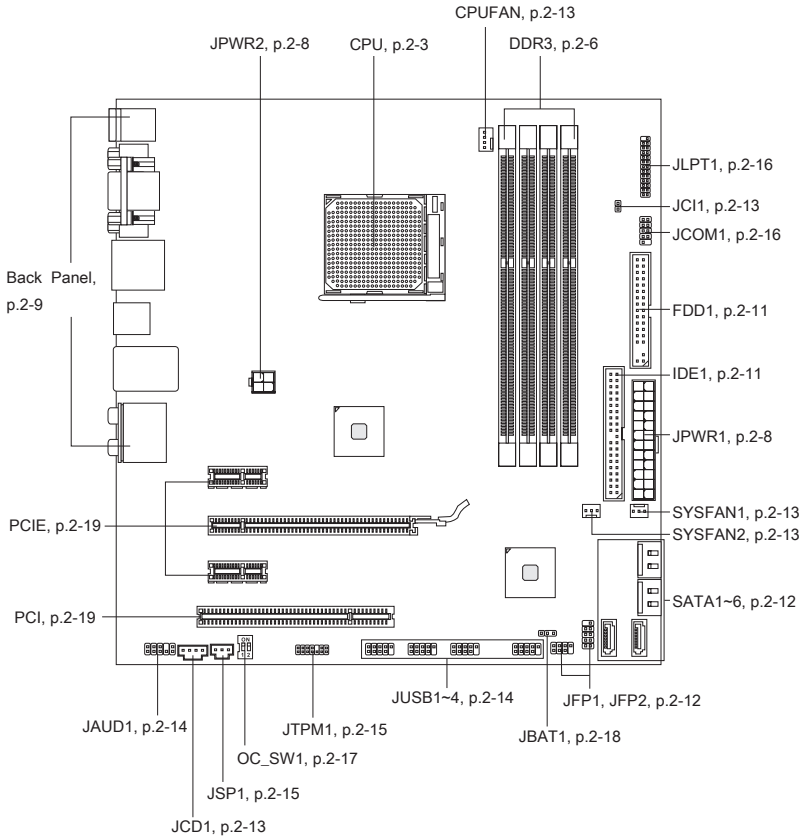
Chapter 2

Hardware Setup

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

Quick Components Guide



CPU (Central Processing Unit)

When you are installing the CPU, make sure to install the cooler to prevent overheating. If you do not have the CPU cooler, consult your dealer before turning on the computer. For the latest information about CPU, please visit http://www.msi.com/index.php?func=cpuform2

Important

Overheating

Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU from overheating. Make sure that you apply an even layer of thermal paste (or thermal tape) between the CPU and the heatsink to enhance heat dissipation.

Replacing the CPU

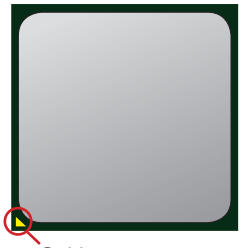
While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from the grounded outlet first to ensure the safety of CPU.

Overclocking

This mainboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.

Introduction to AM3 CPU

The surface of CPU. Remember to apply some thermal paste on it for better heat dispersion.

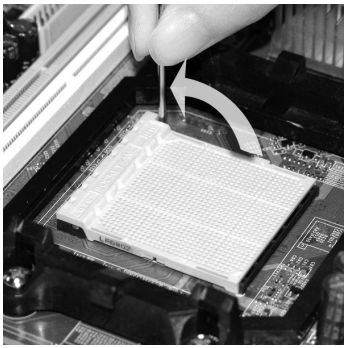


CPU & Cooler Installation

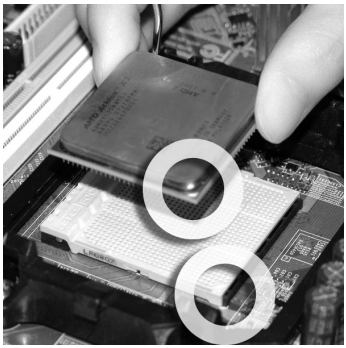
When you are installing the CPU, **make sure the CPU has a cooler attached on the top to prevent overheating**. Meanwhile, do not forget to apply some thermal paste on CPU before installing the heat sink/cooler fan for better heat dispersion.

Follow the steps below to install the CPU & cooler correctly. Wrong installation will cause the damage of your CPU & mainboard.

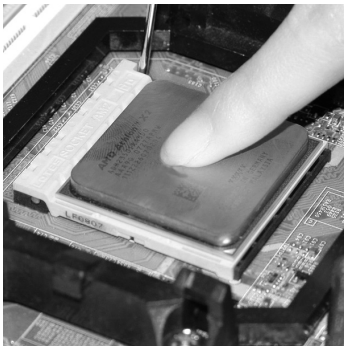
1. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.



2. Look for the gold arrow of the CPU. The gold arrow should point as shown in the picture. The CPU can only fit in the correct orientation.



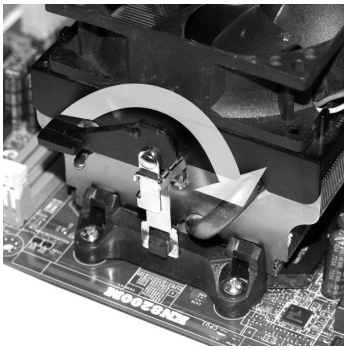
3. If the CPU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damages to your mainboard.



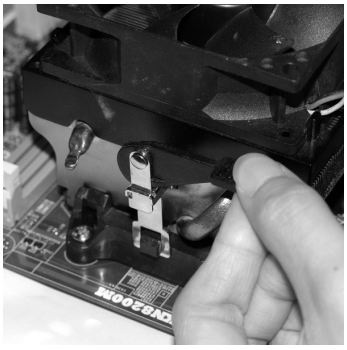
4. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.

5. Position the cooling set onto the retention mechanism.
   Hook one end of the clip to hook first.

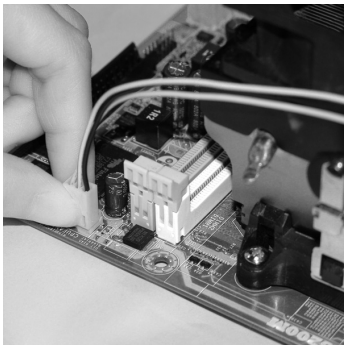
6. Then press down the other end of the clip to fasten the cooling set on the top of the retention mechanism.
   Locate the Fix Lever and lift up it .



7. Fasten down the lever.



8. Attach the CPU Fan cable to the CPU fan connector on the mainboard.

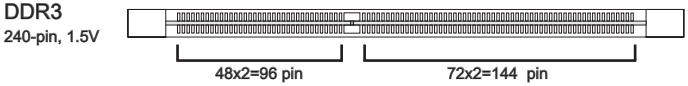


Important

- *Mainboard photos shown in this section are for demonstration of the cooler installation for Socket AM3 CPUs only. The appearance of your mainboard may vary depending on the model you purchase.*
- *While disconnecting the Safety Hook from the fixed bolt, it is necessary to keep an eye on your fingers, because once the Safety Hook is disconnected from the fixed bolt, the fixed lever will spring back instantly.*

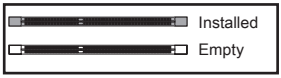
Memory

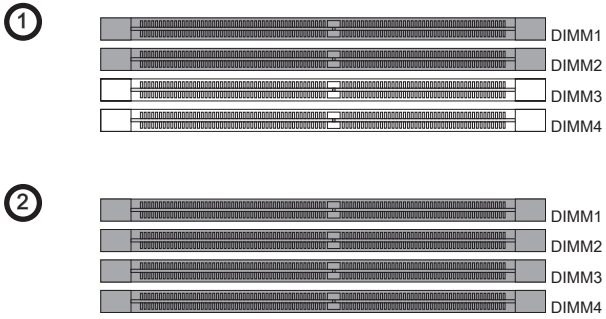
These DIMM slots are used for installing memory modules.
For more information on compatible components, please visit
http://www.msi.com/index.php?func=testreport



Dual-Channel mode Population Rule

In Dual-Channel mode, the memory modules can transmit and receive data with two data bus lines simultaneously. Enabling Dual-Channel mode can enhance the system performance. The following illustrations explain the population rules for Dual-Channel mode.





Important

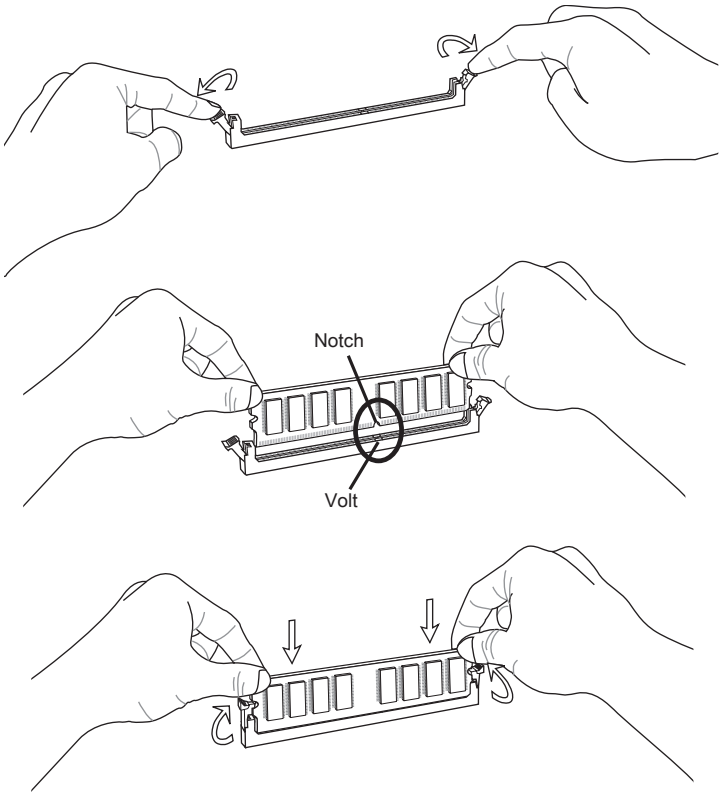
- *DDR3 memory modules are not interchangeable with DDR2 and the DDR3 standard is not backwards compatible. You should always install DDR3 memory modules in the DDR3 DIMM slots.*
- *In Dual-Channel mode, make sure that you install memory modules of the **same type and density** in different channel DIMM slots.*
- *To enable successful system boot-up, always insert the memory modules into the **DIMM1 first**.*

Installing Memory Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot. The plastic clip at each side of the DIMM slot will automatically close when the memory module is properly seated.
3. Manually check if the memory module has been locked in place by the DIMM slot clips at the sides.

Important

You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.

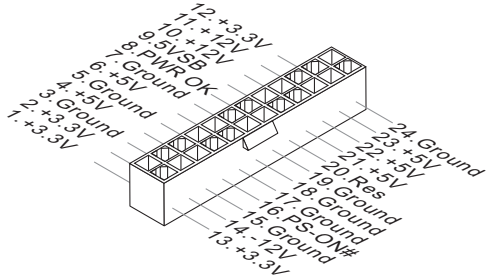


Power Supply

ATX 24-pin Power Connector: JPWR1

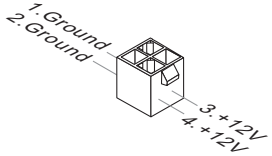
This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13.



ATX 4-pin Power Connector: JPWR2

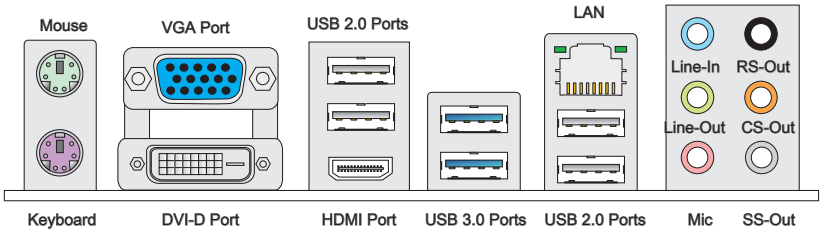
This power connector is used to provide power to the CPU.



Important

- *Make sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.*
- *Power supply of 400 watts (and above) is highly recommended for system stability.*

Back Panel



▸Mouse/Keyboard

The standard PS/2® mouse/keyboard DIN connector is for a PS/2® mouse/keyboard.

▸VGA Port

The DB15-pin female connector is provided for monitor.

▸DVI-D Port

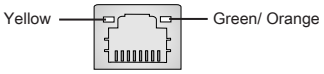
The DVI-D (Digital Visual Interface-Digital) connector allows you to connect a LCD monitor. It provides a high-speed digital interconnection between the computer and its display device. To connect an LCD monitor, simply plug your monitor cable into the DVI-D connector, and make sure that the other end of the cable is properly connected to your monitor (refer to your monitor manual for more information.)

▸HDMI Port

The High-Definition Multimedia Interface (HDMI) is an all-digital audio/video interface capable of transmitting uncompressed streams. HDMI supports all TV format, including standard, enhanced, or high-definition video, plus multi-channel digital audio on a single cable.

▸LAN

The standard RJ-45 LAN jack is for connection to the Local Area Network (LAN). You can connect a network cable to it.



LED	Color	LED State	Condition
Left	Yellow	Off	LAN link is not established.
		On(Steady state)	LAN link is established.
		On(brighter & pulsing)	The computer is communicating with another computer on the LAN.
Right	Green	Off	10 Mbit/sec data rate is selected.
		On	100 Mbit/sec data rate is selected.
	Orange	On	1000 Mbit/sec data rate is selected.

▸USB 2.0 Port

The USB (Universal Serial Bus) port is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices. Supports data transfer rate up to 480Mbit/s (Hi-Speed).

▸USB 3.0 Port

USB 3.0 port is backward-compatible with USB 2.0 devices. Supports data transfer rate up to 5 Gbit/s (SuperSpeed).

Important

If you want to use a USB 3.0 device, you must use the USB 3.0 cable to connect to the USB 3.0 port.

▸Audio Ports

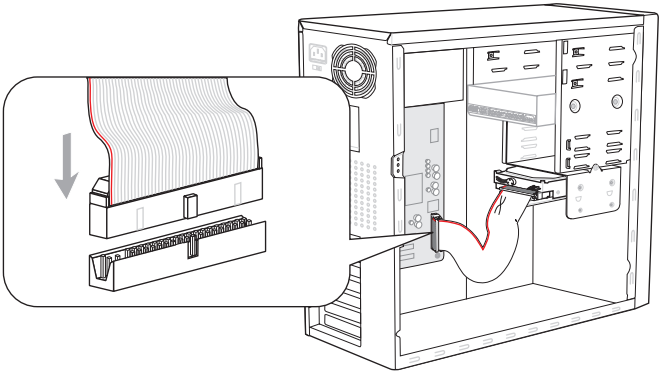
These audio connectors are used for audio devices. It is easy to differentiate between audio effects according to the color of audio jacks.

- Line-In (Blue) - Line In, is used for external CD player, tape-player or other audio devices.
- Line-Out (Green) - Line Out, is a connector for speakers or headphones.
- Mic (Pink) - Mic, is a connector for microphones.
- RS-Out (Black) - Rear-Surround Out in 4/ 5.1/ 7.1 channel mode.
- CS-Out (Orange) - Center/ Subwoofer Out in 5.1/ 7.1 channel mode.
- SS-Out (Gray) - Side-Surround Out 7.1 channel mode.

Connectors

Floppy Disk Drive Connector: FDD1

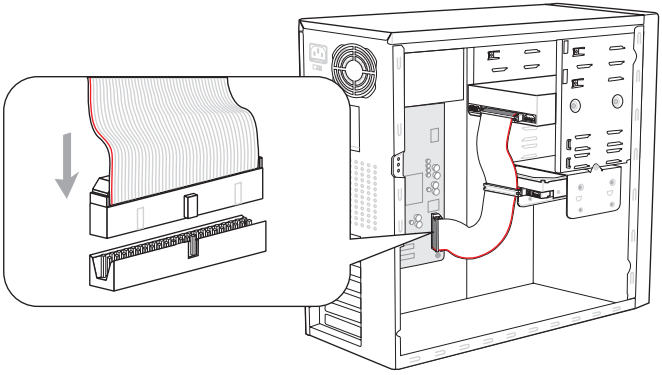
This connector supports 360KB, 720KB, 1.2MB, 1.44MB or 2.88MB floppy disk drive.



* The MB layout in this figure is for reference only.

IDE Connector: IDE1

This connector supports IDE hard disk drives, optical disk drives and other IDE devices.



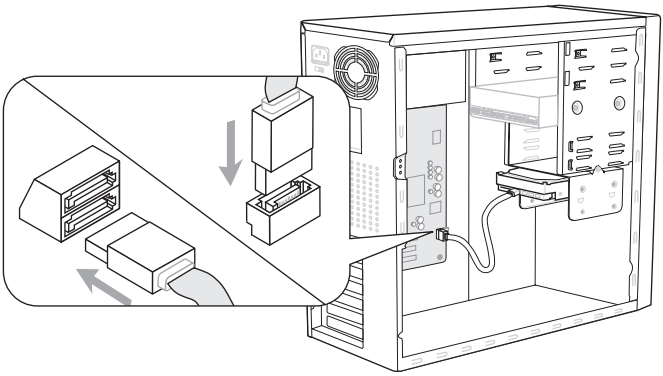
* The MB layout in this figure is for reference only.

Important

If you install two IDE devices on the same cable, you must configure the drives separately to master / slave mode by setting jumpers. Refer to IDE device's documentation supplied by the vendors for jumper setting instructions.

Serial ATA Connector: SATA1~6

This connector is a high-speed Serial ATA interface port. Each connector can connect to one Serial ATA device.



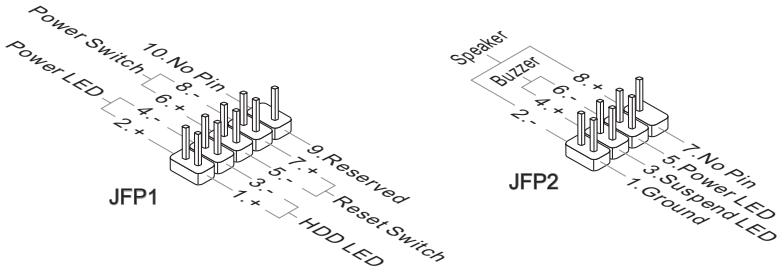
* The MB layout in this figure is for reference only.

Important

- *Please do not fold the Serial ATA cable into 90-degree angle. Otherwise, data loss may occur during transmission.*

Front Panel Connector: JFP1, JFP2

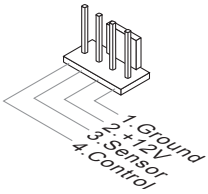
This connector is for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.



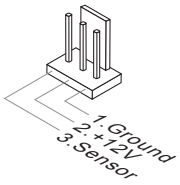
Fan Power Connectors: CPUFAN, SYSFAN1, SYSFAN2

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always note that the red wire is the positive and should be connected to the +12V; the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

CPUFAN



SYSFAN1/ SYSFAN2

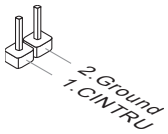


Important

- *Please refer to the recommended CPU fans at processor's official website or consult the vendors for proper CPU cooling fan.*
- *CPUFAN supports fan control. You can install* ***Overclocking Center*** *utility that will automatically control the CPU fan speed according to the actual CPU temperature.*
- *Fan cooler set with 3 or 4 pins power connector are both available for CPUFAN*

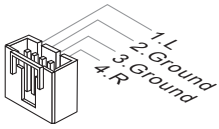
Chassis Intrusion Connector: JCI1

This connector connects to the chassis intrusion switch cable. If the chassis is opened, the chassis intrusion mechanism will be activated. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.



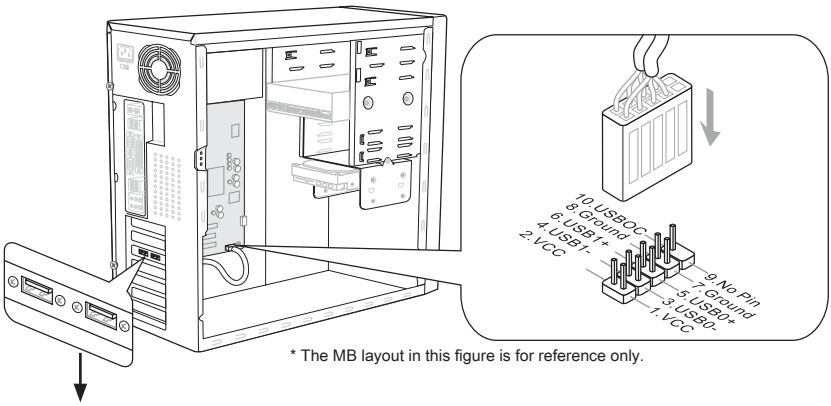
CD-In Connector: JCD1

This connector is provided for external audio input.



Front USB Connector: JUSB1~4

This connector, compliant with Intel® I/O Connectivity Design Guide, is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems and the like.

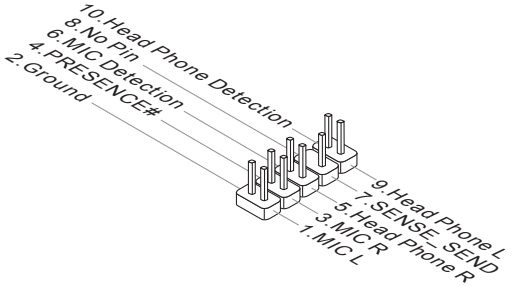


Important

Note that the pins of VCC and GND must be connected correctly to avoid possible damage.

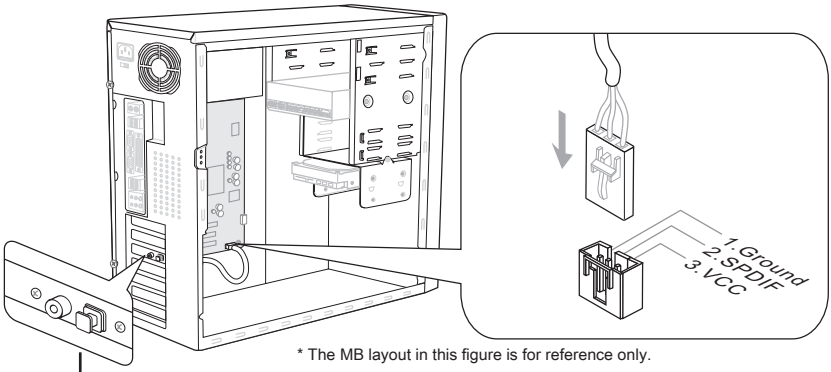
Front Panel Audio Connector: JAUD1

This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.



S/PDIF-Out Connector: JSP1

This connector is used to connect S/PDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.

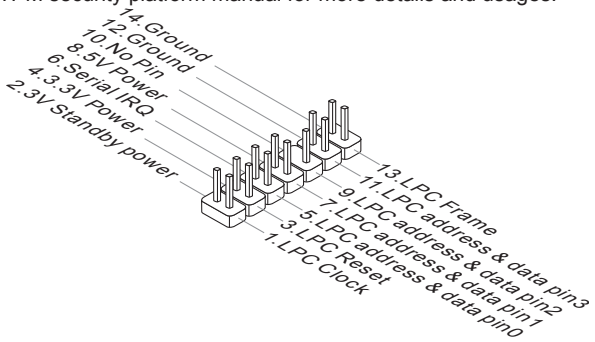


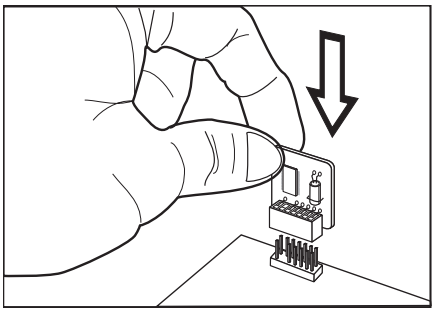
* The MB layout in this figure is for reference only.

S/PDIF-Out Bracket (optional)

TPM Module connector: JTPM1

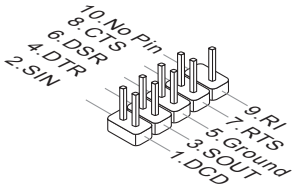
This connector connects to a TPM (Trusted Platform Module) module (optional). Please refer to the TPM security platform manual for more details and usages.





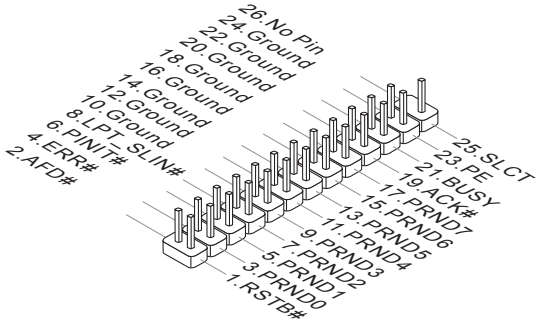
Serial Port Connector: JCOM1

This connector is a 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial device.



Parallel Port Header: JLPT1

This connector is used to connect an optional parallel port bracket. The parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.



Switch

Easy FSB Switch: OC_SW1

You can overclock the FSB to increase the processor frequency by changing the switch. Follow the instructions below to set the FSB.

Default

Increase 10% speed of FSB

Increase 15% speed of FSB

Increase 20% speed of FSB

Important

- *Make sure that you power off the system before setting the switch.*
- *When overclocking cause system instability or crash during boot, please set the switch to default setting.*

Jumpers

Clear CMOS Jumper: JBAT1

There is a CMOS RAM onboard that has a power supply from an external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the jumper to clear data.

JBAT1

Keep Data

Clear Data

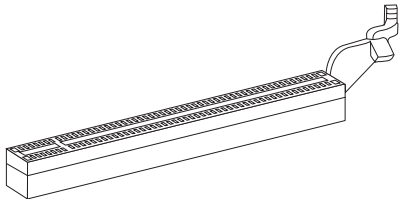
Important

You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

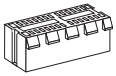
Slots

PCI (Peripheral Component Interconnect) Express Slot

The PCI Express slot supports the PCI Express interface expansion card.



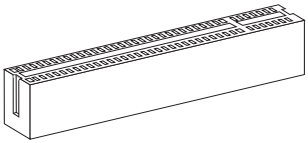
PCI Express x16 Slot



PCI Express x1 Slot

PCI (Peripheral Component Interconnect) Slot

The PCI slot supports LAN card, SCSI card, USB card, and other add-on cards that comply with PCI specifications.



32-bit PCI Slot

Important

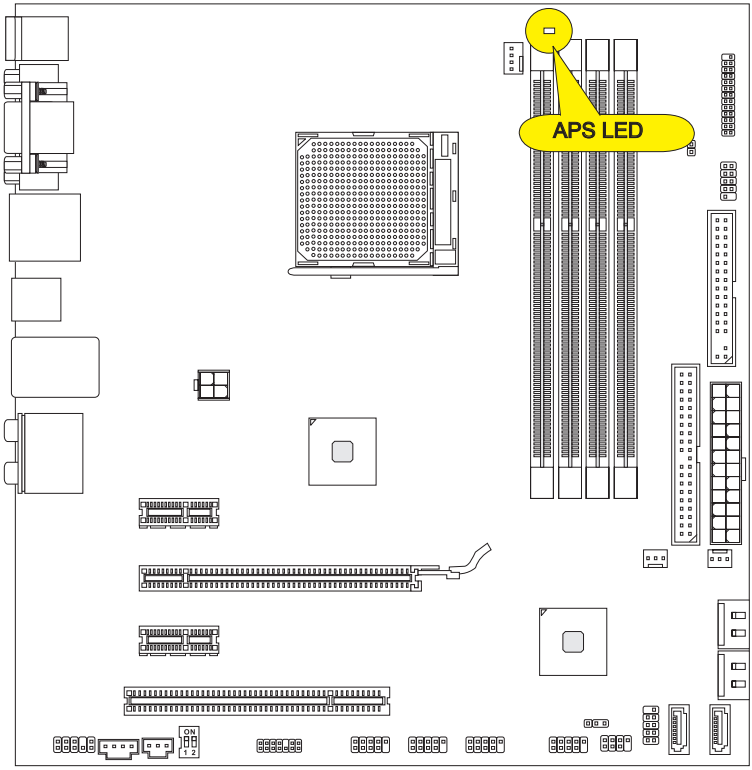
When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to configure any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

	Order1	Order2	Order3	Order4
PCI Slot1	INT E#	INT F#	INT G#	INT H#

LED Status Indicators

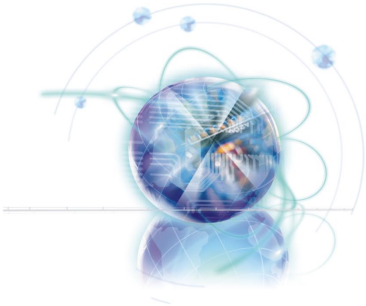


APS LED

These APS (Active Phase Switching) LED indicates the current CPU power phase mode. Follow the instructions below to read.

■ : ON, □ : OFF

■ The LED will light blue when CPU is in 2 or 3 phase power mode.
□ The LED will off when CPU is in 1 phase power mode.



Chapter 3

BIOS Setup

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.

You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run SETUP.
- You want to change the default settings for customized features.

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

- *The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.*
- *Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:*

A7623AMS V3.0 032210 where:

1st digit refers to BIOS maker as A = AMI, W = AWARD, and P = PHOENIX.

2nd - 5th digit refers to the model number.

6th digit refers to the chipset as I = Intel, N = NVIDIA, A = AMD and V = VIA.

7th - 8th digit refers to the customer as MS = all standard customers.

V3.0 refers to the BIOS version.

032210 refers to the date this BIOS was released.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General Help
<F4>	Enter the CPU Spec. menu, and read the CPU information
<F5>	Enter the Memory-Z menu, and read the memory information
<F6>	Load Optimized Defaults
<F8>	Load Fail-Safe Defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

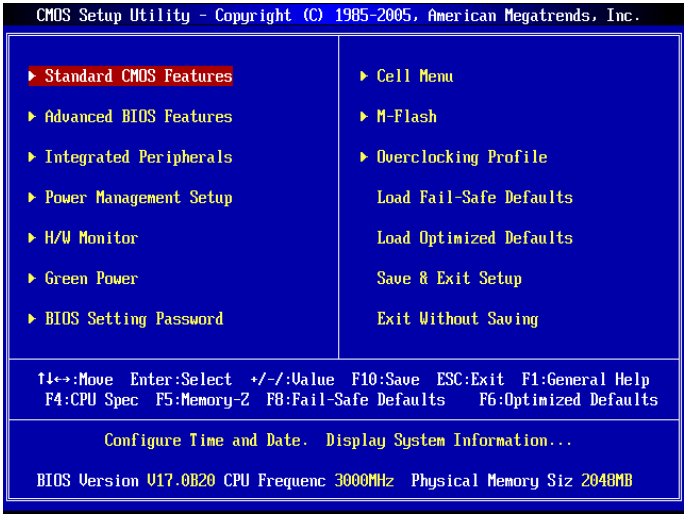
Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

The Main Menu


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Standard CMOS Features
Advanced BIOS Features
Integrated Peripherals
Power Management Setup
H/W Monitor
Green Power
BIOS Setting Password
Cell Menu
M-Flash
Overclocking Profile
Load Fail-Safe Defaults
Load Optimized Defaults
Save & Exit Setup
Exit Without Saving
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults
Configure Time and Date. Display System Information...
BIOS Version V17.0B20 CPU Frequenc 3000MHz Physical Memory Siz 2048MB

▸Standard CMOS Features

Use this menu for basic system configurations, such as time, date etc.

▸Advanced BIOS Features

Use this menu to setup the items of the BIOS special enhanced features.

▸Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

▸Power Management Setup

Use this menu to specify your settings for power management.

▸H/W Monitor

This entry shows your PC health status.

▸Green Power

Use this menu to specify the power phase.

▸BIOS Setting Password

Use this menu to set the password for BIOS.

▸Cell Menu

Use this menu to specify your settings for frequency/voltage control and overclocking.

▸ **M-Flash**

Use this menu to read/ flash the BIOS from storage drive (FAT/ FAT32 format only).

▸ **Overclocking Profile**

Use this menu to save/ load your settings to/ from CMOS for BIOS.

▸ **Load Fail-Safe Defaults**

Use this menu to load the default values set by the BIOS vendor for stable system performance.

▸ **Load Optimized Defaults**

Use this menu to load the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard.

▸ **Save & Exit Setup**

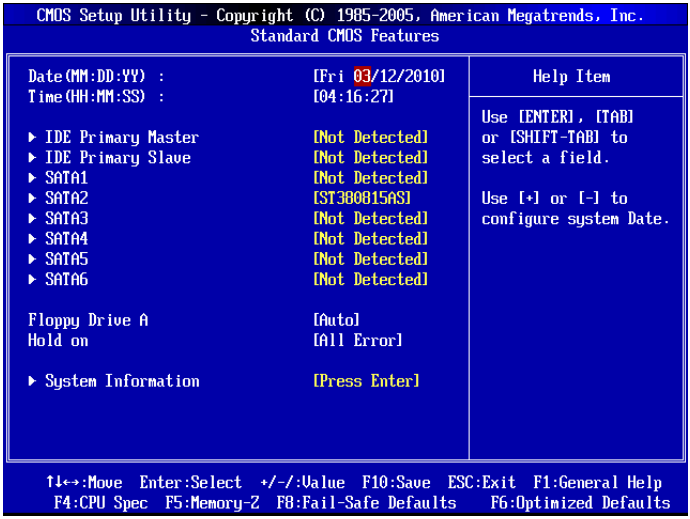
Save changes to CMOS and exit setup.

▸ **Exit Without Saving**

Abandon all changes and exit setup.

Standard CMOS Features

The items in Standard CMOS Features Menu include some basic setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Standard CMOS Features
Date(MM:DD:YY) : [Fri 03/12/2010]
Time(HH:MM:SS) : [04:16:27]
▸ IDE Primary Master [Not Detected]
▸ IDE Primary Slave [Not Detected]
▸ SATA1 [Not Detected]
▸ SATA2 [ST380815AS]
▸ SATA3 [Not Detected]
▸ SATA4 [Not Detected]
▸ SATA5 [Not Detected]
▸ SATA6 [Not Detected]
Floppy Drive A [Auto]
Hold on [All Error]
▸ System Information [Press Enter]
Help Item
Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

▸Date (MM:DD:YY)

This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

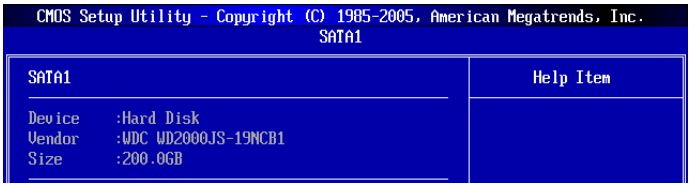
[day]	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
[month]	The month from Jan. through Dec.
[date]	The date from 1 to 31 can be keyed by numeric function keys.
[year]	The year can be adjusted by users.

▸Time (HH:MM:SS)

This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

▸IDE Primary Master/ Slave & SATA1~6

Press <Enter> to enter the sub-menu, and the following screen appears.



▸Device / Vendor / Size

It will show the device information that you connected to the SATA connector.

▸LBA/Large Mode

This allows you to enable or disable the LBA Mode. Setting to Auto enables LBA mode if the device supports it and the devices is not already formatted with LBA mode disabled.

▸DMA Mode

Select DMA Mode.

▸Hard Disk S.M.A.R.T.

This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data from a hard disk that is going to fail to a safe place before the hard disk becomes offline.

Important

IDE Primary Master/ Slave, SATA 1~6 are appearing when you connect the HD devices to the IDE/ SATA connectors on the mainboard.

▸Floppy Drive A

This item allows you to set the type of floppy drives installed.

▸Halt On

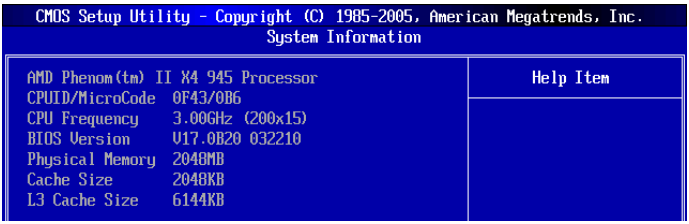
The setting determines whether the system will stop if an error is detected at boot. When the system stops for the errors preset, it will halt on for 15 seconds and then automatically resume its operation. Available options are:

[All Errors] The system stops when any error is detected.

[No Errors] The system doesn't stop for any detected error.

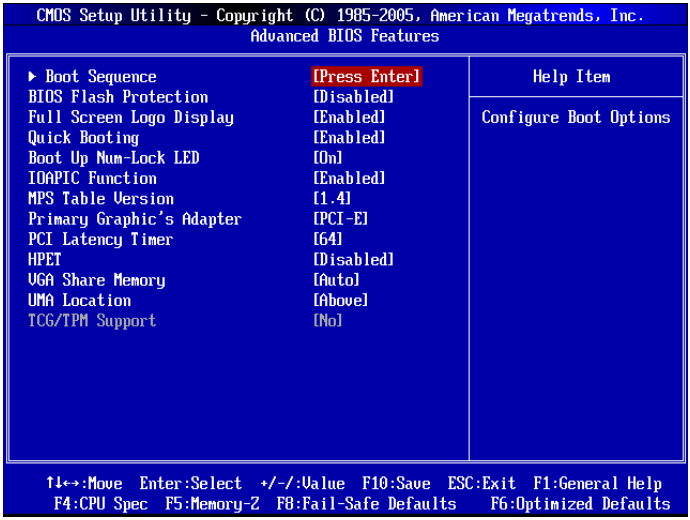
▸System Information

Press <Enter> to enter the sub-menu, and the following screen appears.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
System Information
AMD Phenom(tm) II X4 945 Processor
CPUID/MicroCode 0F43/0B6
CPU Frequency 3.00GHz (200x15)
BIOS Version V17.0B20 032210
Physical Memory 2048MB
Cache Size 2048KB
L3 Cache Size 6144KB
Help Item

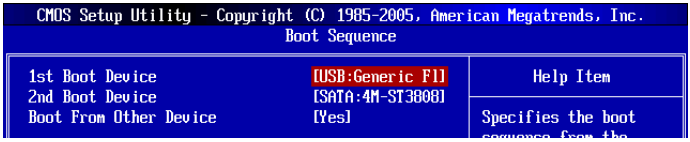
This sub-menu shows the CPU information, BIOS version and memory status of your system (read only).

Advanced BIOS Features


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Advanced BIOS Features
▸ Boot Sequence [Press Enter]
BIOS Flash Protection [Disabled]
Full Screen Logo Display [Enabled]
Quick Booting [Enabled]
Boot Up Num-Lock LED [On]
IOAPIC Function [Enabled]
MPS Table Version [1.4]
Primary Graphic's Adapter [PCI-E]
PCI Latency Timer [64]
HPET [Disabled]
VGA Share Memory [Auto]
UMA Location [Above]
TCG/TPM Support [No]
Help Item
Configure Boot Options
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

▸Boot Sequence

Press <Enter> to enter the sub-menu.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Boot Sequence
1st Boot Device [USB:Generic Fl]
2nd Boot Device [SATA:4M-ST3808]
Boot From Other Device [Yes]
Help Item
Specifies the boot

▸Boot Device

These items allow you to arrange the order that the BIOS uses to look for a boot device from which to load the operating system during the boot process.

▸Boot From Other Device

Setting the option to [Yes] allows the system to try to boot from other device, if the system fails to boot from above devices.

▸BIOS Flash Protection

This function protects the BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS' data cannot be changed when attempting to update the BIOS with a Flash utility. To successfully update the BIOS, you will need to disable this Flash BIOS Protection function. You should enable this function at all times. The only time when you need to disable it is when you want to update the BIOS. After updating the BIOS, you should immediately re-enable it to protect it against viruses.

▸Full Screen Logo Display

This item enables this system to show the company logo on the boot-up screen. Settings are:

[Enabled] Shows a still image (logo) on the full screen at boot.

[Disabled] Shows the POST messages at boot.

▸Quick Booting

Setting the item to [Enabled] allows the system to boot within 10 seconds since it will skip some check items.

▸Boot Up Num-Lock LED

This setting is to set the Num Lock status when the system is powered on. Setting to [On] will turn on the Num Lock key when the system is powered on. Setting to [Off] will allow users to use the arrow keys on the numeric keypad.

▸IOAPIC Function

This field is used to enable or disable the APIC (Advanced Programmable Interrupt Controller). Due to compliance with PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQ resources for the system.

▸MPS Table Version

This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, consult the vendor of your operating system.

▸Primary Graphic's Adapter

This setting specifies which graphic card is your primary graphics adapter.

▸PCI Latency Timer

This item controls how long each PCI device can hold the bus before another takes over. When set to higher values, every PCI device can conduct transactions for a longer time and thus improve the effective PCI bandwidth. For better PCI performance, you should set the item to higher values.

▸HPET

The HPET (High Precision Event Timers) is a component that is part of the chipset. You can to enable it, and will provide you with the means to get to it via the various ACPI methods.

▸VGA Share Memory

The system shares memory to the onboard VGA card. This setting controls the exact memory size shared to the VGA card.

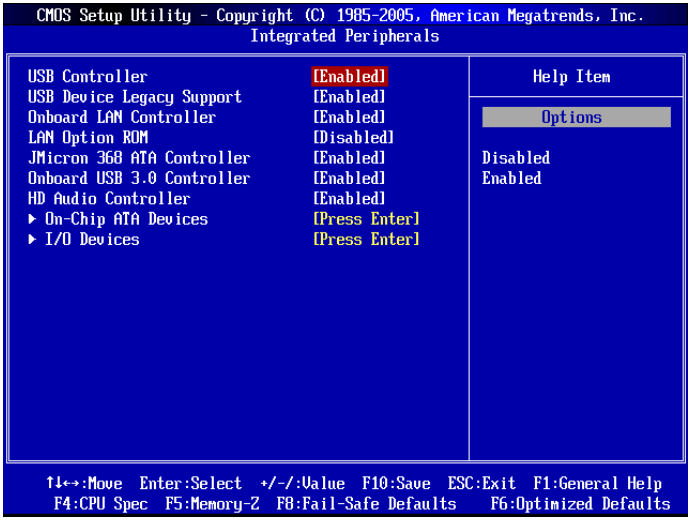
▸UMA Location

This function is used to select the location of UMA to avoid overlaping with the other data blocks in system memory.

▸TCG/TPM SUPPORT

Setting the option to [Yes] enables TPM (Trusted Platform Module) to the system.

Integrated Peripherals


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Integrated Peripherals
USB Controller [Enabled]
USB Device Legacy Support [Enabled]
Onboard LAN Controller [Enabled]
LAN Option ROM [Disabled]
JMicron 368 ATA Controller [Enabled]
Onboard USB 3.0 Controller [Enabled]
HD Audio Controller [Enabled]
▸ On-Chip ATA Devices [Press Enter]
▸ I/O Devices [Press Enter]
Help Item
Options
Disabled
Enabled
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

▸USB Controller

This setting allows you to enable/disable the onboard USB 1.1/ 2.0 controller.

▸USB Device Legacy Support

Select [Enabled] if you need to use a USB-interfaced device in the operating system.

▸Onboard LAN Controller

This setting allows you to enable/disable the onboard LAN controller.

▸LAN Option ROM

This item is used to decide whether to invoke the Boot ROM of the onboard LAN.

▸JMicron 368 ATA Controller

This setting allows you to enable/disable the onboard IDE controller.

▸Onboard USB 3.0 Controller

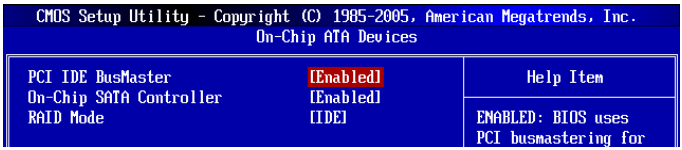
This setting allows you to enable/disable the onboard USB 3.0 controller.

▸HD Audio Controller

This setting is used to enable/disable the onboard audio controller.

▸On-Chip ATA Devices

Press <Enter> to enter the sub-menu and the following screen appears:



▸PCI IDE BusMaster

This item allows you to enable/ disable BIOS to used PCI busmastering for reading/ writing to IDE drives.

▸OnChip SATA Controller

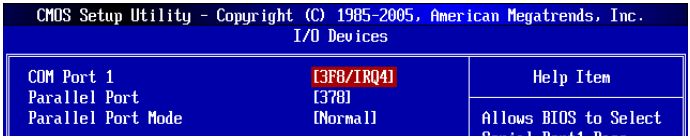
This item allows users to enable or disable the SATA controller.

▸RAID Mode

This item is used to select mode for SATA connectors.

▸I/O Devices

Press <Enter> to enter the sub-menu and the following screen appears:



▸COM Port 1

Select an address and corresponding interrupt for the serial port.

▸Parallel Port

There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

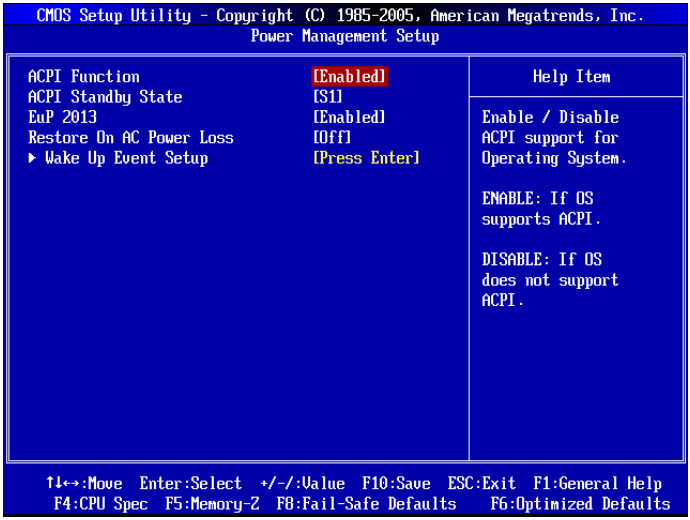
[Disabled]
[3BC] Line Printer port 0
[278] Line Printer port 2
[378] Line Printer port 1

▸ Parallel Port Mode

[Normal] Standard Parallel Port
[EPP] Enhanced Parallel Port
[ECP] Extended Capability Port
[ECP + EPP] Extended Capability Port + Enhanced Parallel Port
[Bi-Directional]

To operate the onboard parallel port as Standard Parallel Port only, choose [Normal]. To operate the onboard parallel port in the EPP mode simultaneously, choose [EPP]. By choosing [ECP], the onboard parallel port will operate in ECP mode only. Choosing [ECP + EPP] will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

Power Management Setup


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Power Management Setup
ACPI Function [Enabled]
ACPI Standby State [S1]
EuP 2013 [Enabled]
Restore On AC Power Loss [Off]
▶ Wake Up Event Setup [Press Enter]
Help Item
Enable / Disable ACPI support for Operating System.
ENABLE: If OS supports ACPI.
DISABLE: If OS does not support ACPI.
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

Important

S3-related functions described in this section are available only when the BIOS supports S3 sleep mode.

▸ACPI Function

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/ 2000/ ME/ XP, select [Enabled].

▸ACPI Standby State

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 2000/ XP, you can choose to enter the Standby mode in S1(POS) or S3(STR) fashion through the setting of this field. Settings are:

[S1] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system's context.

[S3] The S3 sleep mode is a lower power state where the in formation of system configuration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a "wake up" event occurs.

▸EuP 2013

This item is used to reduce the power consumption in ACPI S5 state.

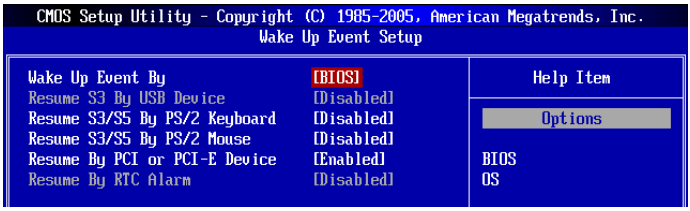
▸Restore On AC Power Loss

This item specifies whether your system will reboot after a power failure or interrupt occurs. Settings are:

[Off]	Always leaves the computer in the power off state.
[On]	Always leaves the computer in the power on state.
[Last State]	Restore the system to the status before power failure or interrupt occurred.

▸Wake Up Event Setup

Press <Enter> and the following sub-menu appears.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Wake Up Event Setup
Wake Up Event By [BIOS]
Resume S3 By USB Device [Disabled]
Resume S3/S5 By PS/2 Keyboard [Disabled]
Resume S3/S5 By PS/2 Mouse [Disabled]
Resume By PCI or PCI-E Device [Enabled]
Resume By RTC Alarm [Disabled]
Help Item
Options
BIOS
OS

▸Wake Up Event By

Setting to [BIOS] activates the following fields, and use the following fields to set the wake up events. Setting to [OS], the wake up events will be defined by OS.

▸Resume From S3 By USB Device

The item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state.

▸Resume From S3 By PS/2 Keyboard/ Mouse

This setting determines whether the system will be awakened from what power saving modes when input signal of the PS/2 keyboard/ mouse is detected.

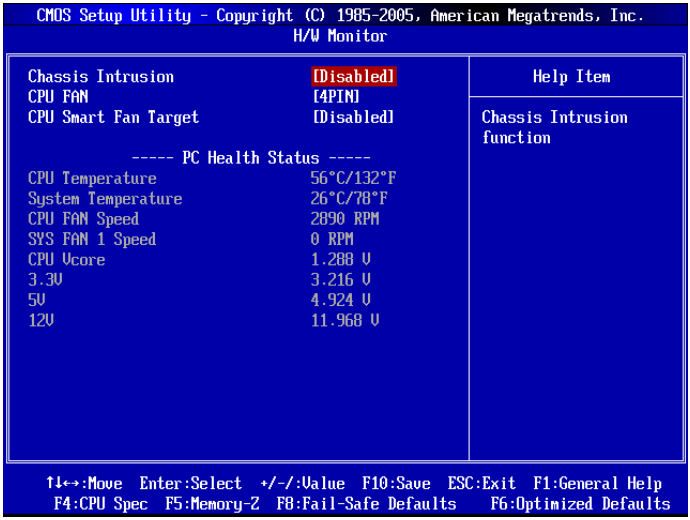
▸Resume By PCI or PCI-E Device

When set to [Enabled], the feature allows your system to be awakened from the power saving modes through any event on PCIE device.

▸Resume By RTC Alarm

The field is used to enable or disable the feature of booting up the system on a scheduled time/date.

H/W Monitor


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
H/W Monitor
Chassis Intrusion [Disabled]
CPU FAN [4PIN]
CPU Smart Fan Target [Disabled]
----- PC Health Status -----
CPU Temperature 56°C/132°F
System Temperature 26°C/78°F
CPU FAN Speed 2890 RPM
SYS FAN 1 Speed 0 RPM
CPU Vcore 1.288 V
3.3V 3.216 V
5V 4.924 V
12V 11.968 V
Help Item
Chassis Intrusion function
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

▸Chassis Intrusion

The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is once opened. To clear the warning message, set the field to [Reset]. The setting of the field will automatically return to [Enabled] later.

▸CPU FAN

This item allows you to select the CPU FAN type.

▸CPU Smart FAN Target

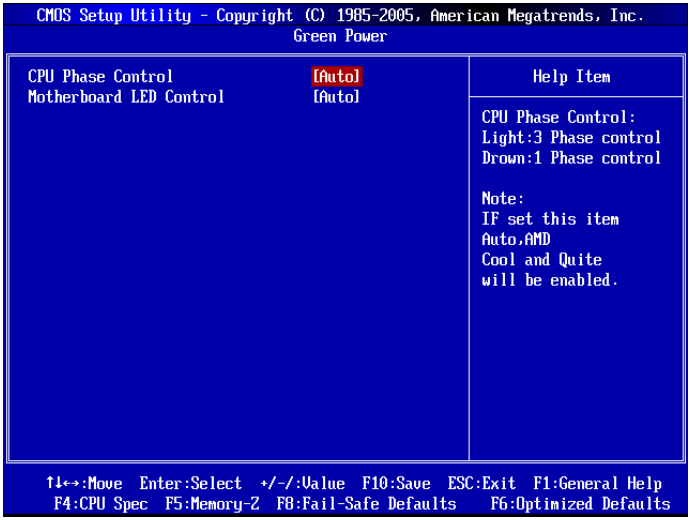
The mainboard provides the Smart Fan function which can control the CPU fan speed automatically depending on the current temperature to keep it with in a specific range. You can enable a fan target value here. If the current CPU fan temperature reaches to the target value, the smart fan function will be activated. It provides several sections to speed up for cooling down automatically.

▸PC Health Status

▸CPU/ System Temperature, CPU FAN/ SYS FAN 1 Speed, CPU Vcore, 3.3V, 5V, 12V

These items display the current status of all of the monitored hardware devices/components such as CPU voltage, temperatures and all fans' speeds.

Green Power



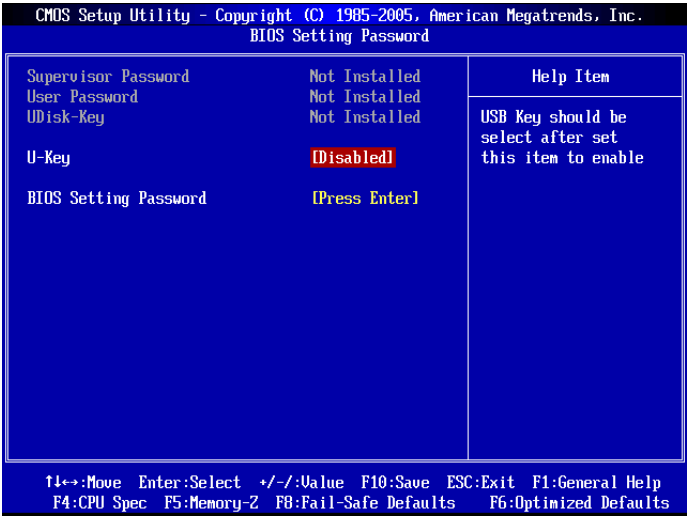
▸CPU Phase Control

When set to [Enabled], the hardware will auto adjust the CPU power phase according to the loading of CPU to reach the best power saving function.

▸Motherboard LED Control

This item is used to control the power phase LEDs of the motherboard.

BIOS Setting Password



▸U-Key

This item is used to enable/ disable USB driver device as a key.

▸Make U-Key at

This item is used to specify the USB driver device as a key.

▸Change Supervisor Password

This item is used to set the supervisor password.

▸Change User Password

This item is used to set the user password.

Important

Type the password, up to eight characters in length, and press <Enter>. The password typed now will replace any previously set password. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

When a password has been set, you will be prompted to enter it every time you try to enter Setup/ System. This prevents an unauthorized person from changing any part of your system configuration.

About Supervisor Password & User Password:

***Supervisor password**: Can enter and change the settings of the setup menu.*

***User password**: Can only enter but do not have the right to change the settings of the setup menu.*

▸ **User Access Level**

This item is used to limit the user access level.

▸ **Passwrod Check**

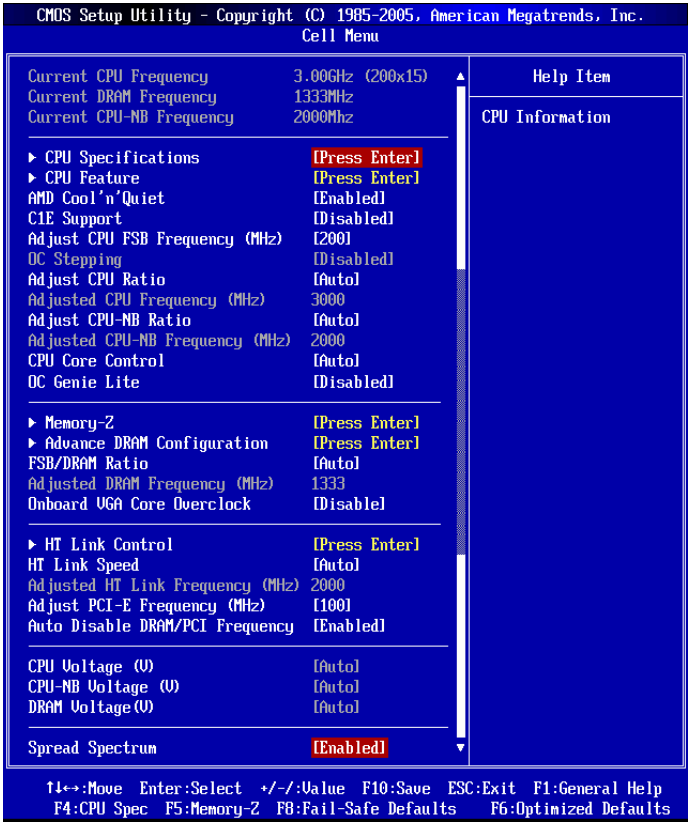
This specifies the type of BIOS password protection that is implemented. Settings are described below:

Option	Description
[BIOS]	The password prompt appears only when end users try to run Setup.
[System]	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

▸ **Save Supervisor Password to**

This item is used to assign a place to save the supervisor password.

Cell Menu


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Cell Menu
Current CPU Frequency 3.00GHz (200x15)
Current DRAM Frequency 1333MHz
Current CPU-NB Frequency 2000Mhz
CPU Specifications [Press Enter]
CPU Feature [Press Enter]
AMD Cool'n'Quiet [Enabled]
C1E Support [Disabled]
Adjust CPU FSB Frequency (MHz) [200]
OC Stepping [Disabled]
Adjust CPU Ratio [Auto]
Adjusted CPU Frequency (MHz) 3000
Adjust CPU-NB Ratio [Auto]
Adjusted CPU-NB Frequency (MHz) 2000
CPU Core Control [Auto]
OC Genie Lite [Disabled]
Memory-Z [Press Enter]
Advance DRAM Configuration [Press Enter]
FSB/DRAM Ratio [Auto]
Adjusted DRAM Frequency (MHz) 1333
Onboard VGA Core Overclock [Disable]
HT Link Control [Press Enter]
HT Link Speed [Auto]
Adjusted HT Link Frequency (MHz) 2000
Adjust PCI-E Frequency (MHz) [100]
Auto Disable DRAM/PCI Frequency [Enabled]
CPU Voltage (V) [Auto]
CPU-NB Voltage (V) [Auto]
DRAM Voltage(V) [Auto]
Spread Spectrum [Enabled]
Help Item
CPU Information
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

Important

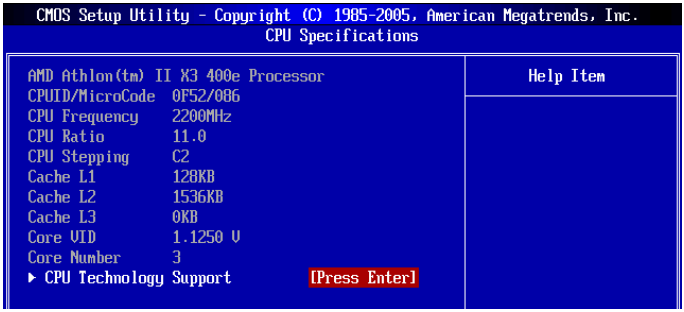
Change these settings only if you are familiar with the chipset.

▸Current CPU / DRAM / CPU-NB Frequency

These items show the current clocks of CPU, Memory and CPU-NB speed. Read-only.

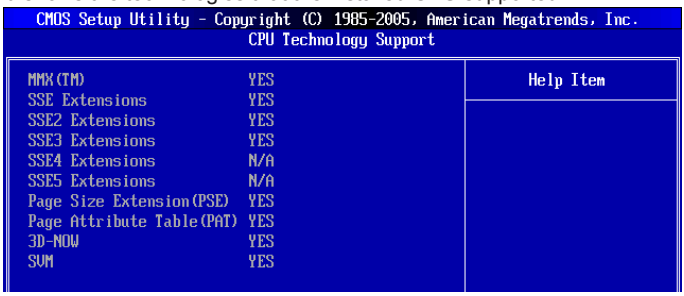
▸CPU Specifications

Press <Enter> to enter the sub-menu and the following screen appears. This submenu shows the information of installed CPU.



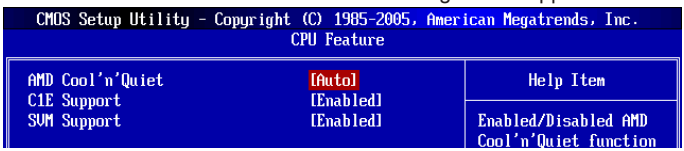
▸CPU Technology Support

Press <Enter> to enter the sub-menu and the following screen appears. This sub-menu shows the technologies that the installed CPU supported.



▸CPU Feature

Press <Enter> to enter the sub-menu and the following screen appears:



▸AMD Cool'n'Quiet

The Cool'n'Quiet technology can effectively and dynamically lower CPU speed and power consumption.

▸C1E Support

To enable this item to red the CPU power consumption while idle. Not all porcessors support Enhanced Halt tate (C1E).

▸AMD Cool'n'Quiet

The Cool'n'Quiet technology can effectively and dynamically lower CPU speed and power consumption.

Important

To ensure that Cool'n'Quiet function is activated and will be working properly, it is required to double confirm that:

- *Run BIOS Setup, and select Cell Menu. Under* ***Cell Menu****, find* ***AMD Cool'n'Quiet****, and set this item to "Enabled".*
- *Enter Windows, and select [Start]->[Settings]->[Control Panel]->[Power Options]. Enter* ***Power Options Properties*** *tag, and select* ***Minimal Power Management*** *under* ***Power schemes****.*

▸C1E Support

To enable this item to red the CPU power consumption while idle. Not all porcessors support Enhanced Halt tate (C1E).

▸Adjust CPU FSB Frequency (MHz)

This item allows you to select the CPU Front Side Bus clock frequency (in MHz).

▸OC Stepping

This item will be enabled after you set the overclocking frequency in the "Adjust CPU Base Frequency (MHz)". And the following items will appear. This items will help the system to overclock step by step after system booting up.

▸Start OC Stepping From (MHz)

This item is used to set the initial base clock. The system will boot with the initial base clock, and start to overclock from initial base clock to set base clock that you set in "Adjust CPU Base Frequency (MHz)" step by step.

▸OC Step

This item is used to set how many steps for base colck overclocking.

▸OC Step Count Timer

This item is used to set the buffer time for every step.

▸Adjust CPU Ratio

This item is used to adjust CPU clock multiplier (ratio). It is available only when the processor supports this function.

▸Adjusted CPU Frequency (MHz)

It shows the adjusted CPU frequency. Read-only.

▸Adjust CPU-NB Ratio

This item is used to adjust CPU-NB ratio.

▸Adjusted CPU-NB Frequency (MHz)

It shows the adjusted CPU-NB frequency. Read-only.

▸CPU Core Control

This item is used to control number of CPU cores. When set to [Auto], the CPU will operate under the default number of cores. When set to [Manual], you will be able to enable/disable the specific CPU core.

▸Core 1/ 2/ 3/ 4

These items are used to enable/disable the core 1/ 2/ 3/ 4.

▸OC Genie Lite

Setting this item to [Enabled] allows the system to detect the maximum FSB clock and to overclock automatically. If overclocking fails to run, you can try the lower FSB clock for overclocking successfully.

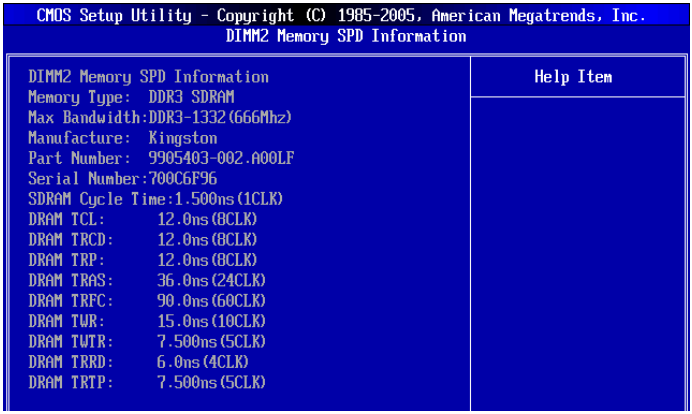
▸Memory-Z

Press <Enter> to enter the sub-menu and the following screen appears.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Memory-Z
▸ DIMM2 Memory SPD Information
[Press Enter]
Help Item

▸DIMM1~4 Memory SPD Information

Press <Enter> to enter the sub-menu and the following screen appears. This sub-menu displays the information of installed memory.



▸Advance DRAM Configuration

Press <Enter> to enter the sub-menu and the following screen appears.

▸DRAM Timing Mode

Select whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to [Auto] enables DRAM timings and the following “Advance DRAM Configuration” sub-menu to be determined by BIOS based on the configurations on the SPD. Selecting [Manual] allows users to configure the DRAM timings and the following related “Advance DRAM Configuration” sub-menu manually.

▸FSB/DRAM Ratio

This item allows you to select the ratio of FSB/ DRAM.

▸Adjusted DRAM Frequency (MHz)

It shows the adjusted Memory frequency. Read-only.

▸Onboard VGA Core OverClock

This item allows you to overclock the onboard VGA.

▸HT Link Control

Press <Enter> to enter the sub-menu.

▸HT Incoming/ Outgoing Link Width

These items allow you to set the Hyper-Transport Link width. Setting to [Auto], the system will detect the HT link width automatically.

▸HT Link Speed

This item allows you to set the Hyper-Transport Link speed. Setting to [Auto], the system will detect the HT link speed automatically.

▸Adjusted HT Link Frequency (MHz)

It shows the adjusted HT Link frequency. Read-only.

▸Adjust PCI-E Frequency (MHz)

This field allows you to select the PCIE frequency (in MHz).

▸Auto Disable DRAM/PCI Frequency

When set to [Enabled], the system will remove (turn off) clocks from empty DRAM/ PCI slots to minimize the electromagnetic interference (EMI).

▸CPU Voltage (V)/ CPU-NB Voltage (V)/ DRAM Voltage (V)

These items are used to adjust the voltage of CPU, Memory and chipset.

▸Spread Spectrum

When the mainboard's clock generator pulses, the extreme values (spikes) of the pulses create EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at Disabled for optimal system stability and performance. But if you are plagued by EMI, set to Enabled for EMI reduction. Remember to disable Spread Spectrum if you are overclocking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your overclocked processor to lock up.

Important

- *If you do not have any EMI problem, leave the setting at [Disabled] for optimal system stability and performance. But if you are plagued by EMI, select the value of Spread Spectrum for EMI reduction.*
- *The greater the Spread Spectrum value is, the greater the EMI is reduced, and the system will become less stable. For the most suitable Spread Spectrum value, please consult your local EMI regulation.*
- *Remember to disable Spread Spectrum if you are overclocking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your overclocked processor to lock up.*

Important

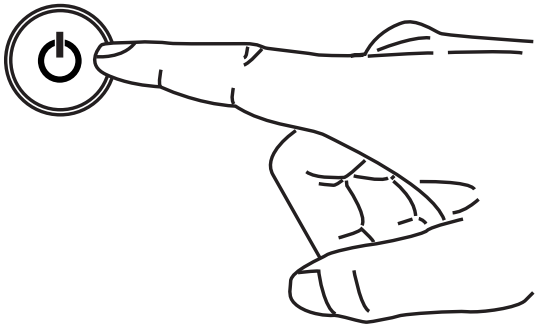
Failed Overclocking Resolution

This motherboard supports overclocking greatly. However, please make sure your peripherals and components are bearable for some special settings. Any operation that exceeds product specification is not recommended. Any risk or damge resulting from improper operation will not be under our product warranty.

Two ways to save your system from failed overclocking...

- *Reboot*

  Press the Power button to reboot the system three times. Please note that, to avoid electric current to affect other devices or components, we suggest an interval of more than 10 seconds among the reboot actions.



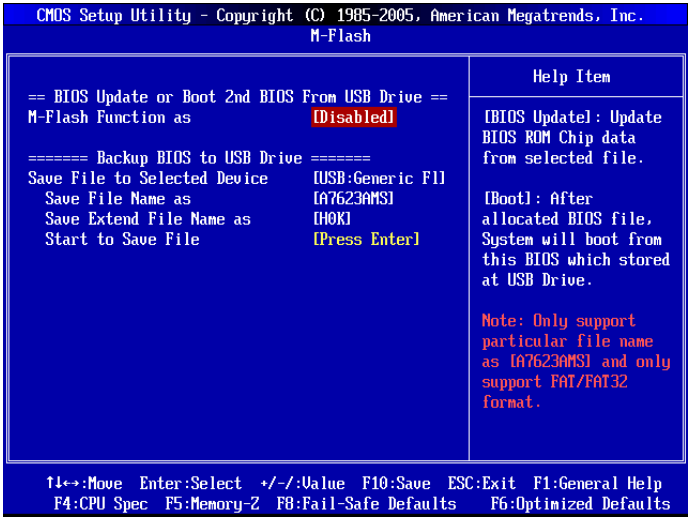
At the fourth reboot, BIOS will determine that the previous overclocking is failed and restore the default settings automatically. Please press any key to boot the system normally when the following message appears on screen.

```
Warning !!! The previous overclocking had failed,
and system will restore its defaults setting,
Press any key to continue.....
```

- *Clear CMOS*

  Please refer to "Chapter 2" for more information about how to clear CMOS data.

M-FLASH


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
M-Flash
== BIOS Update or Boot 2nd BIOS From USB Drive ==
M-Flash Function as [Disabled]
======= Backup BIOS to USB Drive =======
Save File to Selected Device [USB:Generic Fl]
Save File Name as [A7623AMS]
Save Extend File Name as [H0K]
Start to Save File [Press Enter]
Help Item
[BIOS Update]: Update BIOS ROM Chip data from selected file.
[Boot]: After allocated BIOS file, System will boot from this BIOS which stored at USB Drive.
Note: Only support particular file name as [A7623AMS] and only support FAT/FAT32 format.
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

== BIOS Update or Boot 2nd BIOS From USB drive==

▸M-Flash function as

M-Flash function allows you to flash BIOS from USB drive/ storage drive (FAT/ FAT32 format only), or allows the system to boot from the BIOS file inside USB drive (FAT/ FAT32 format only).

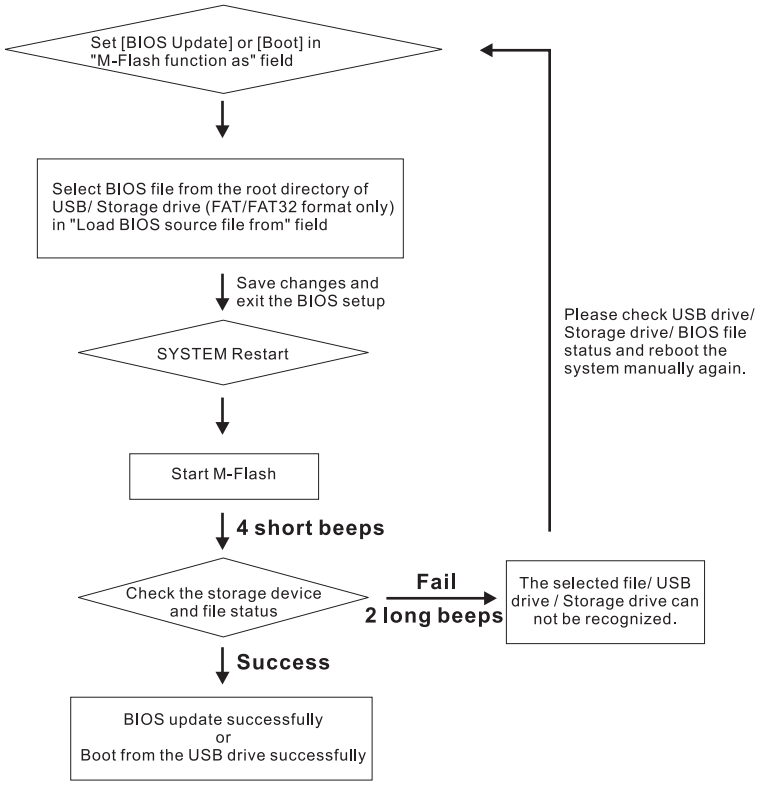
[Disabled] Disable M-Flash function.

[BIOS Update] Flash BIOS via the USB/ Storage drive directly. Update BIOS ROM chip data from selected file, which was be download from official website and must be saved in the root directory of the USB/ Storage drive. It only supports particular file name, which is the official BIOS file name from us.

[Boot] After allocated particular BIOS file, system will boot from this BIOS file which saved in the root directory of USB drive. System will skip MB ROM chip data and boot with this particular BIOS inside USB drive. Note: this option is for USB drive only.

Important

- *Please refer to the block diagram below about the M-Flash function.*


Set [BIOS Update] or [Boot] in "M-Flash function as" field
Select BIOS file from the root directory of USB/ Storage drive (FAT/FAT32 format only) in "Load BIOS source file from" field
Save changes and exit the BIOS setup
SYSTEM Restart
Start M-Flash
4 short beeps
Check the storage device and file status
Fail
2 long beeps
The selected file/ USB drive / Storage drive can not be recognized.
Please check USB drive/ Storage drive/ BIOS file status and reboot the system manually again.
Success
BIOS update successfully
or
Boot from the USB drive successfully

- *Due to the special design of some graphics cards will cause dark screen during M-flash operation, and you may refer the beeps from the system to confirm the current M-flash process.*

▸Load BIOS source file from

When the M-Flash function as sets to [Boot] or [BIOS Update], this item is selectable. Use this item to select particular BIOS file from the USB/ Storage (FAT/32 format only) drive.

== Backup BIOS to USB drive ==

The following fields are used to read the onboard BIOS ROM data, and save it to USB drive/ storage drive.

▸Save File to Selected Device

Please setup a specific folder in specific USB drive/ storage drive to save BIOS file from BIOS ROM chip data. Note: it only supports FAT/ FAT32 file system drive.

▸Save File Name as

Please setup a specific name for the BIOS file, which will be saved into the USB drive/ storage drive. Note: we suggest you using the official name as the default name.

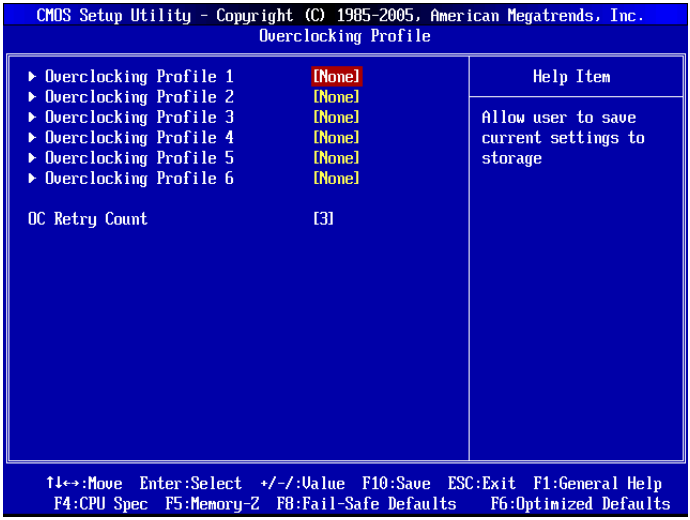
▸Save Extend File name as

Please setup a specific extend name for the BIOS file, which will be saved into the USB drive/ storage drive. Note: we suggest you using [ROM] as default name.

▸Start to save file

Press “Enter” and select “OK” the system will stare to save the onboard ROM chip data to the selected USB drive/ storage drive.

OVERCLOCKING PROFILE


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Overclocking Profile
Overclocking Profile 1 [None]
Overclocking Profile 2 [None]
Overclocking Profile 3 [None]
Overclocking Profile 4 [None]
Overclocking Profile 5 [None]
Overclocking Profile 6 [None]
OC Retry Count [3]
Help Item
Allow user to save current settings to storage
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F4:CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

▸Overclocking Profile 1/ 2/ 3/ 4/ 5/ 6

These items are used to save the currect settings to selected profile, and they are also used to load the settings from the selected profile.

▸OC Retry Count

When the overclocking is failed, setting this item to [1, 3, 5] will allow system to reboot 1/ 3/ 5 times with the overclocking configuration. If the overclocking was failed every time, the system will restore the defaults.

Load Fail-Safe/ Optimized Defaults

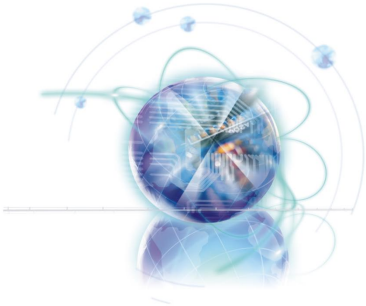
The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard. The Fail-Safe Defaults are the default values set by the BIOS vendor for stable system performance.

When you select Load Fail-Safe Defaults, a message as below appears:

Selecting Ok and pressing Enter loads the BIOS default values for the most stable, minimal system performance.

When you select Load Optimized Defaults, a message as below appears:

Selecting Ok and pressing Enter loads the default factory settings for optimal system performance.



Appendix A

Realtek Audio

The Realtek audio provides 10-channel DAC that simultaneously supports 7.1 sound playback and 2 channels of independent stereo sound output (multiple streaming) through the Front-Out-Left and Front-Out-Right channels.

Installing the Realtek HD Audio Driver

You need to install the HD audio driver for Realtek audio codec to function properly before you can get access to 2-, 4-, 6-, 8- channel or 7.1+2 channel audio operations. Follow the procedures described below to install the drivers for different operating systems.

Installation for Windows®

For Windows® XP, you must install Windows® XP Service Pack3 or later before installing the driver.

The following illustrations are based on Windows® 7 environment and could look slightly different if you install the drivers in different operating systems.

1. Insert the application DVD into the DVD-ROM drive. The setup screen will automatically appear.
2. Click Driver tab.
3. Click Audio button.

4. Select Realtek HD Audio Drivers to start installing the drivers.
5. Click Next to install the Realtek High Definition Audio Driver.
6. Follow the on-screen instructions to install drivers.
7. Click Finish to restart the system.

Important

The HD Audio Configuration software utility is under continuous update to enhance audio applications. Hence, the program screens shown here in this section may be slightly different from the latest software utility and shall be held for reference only.

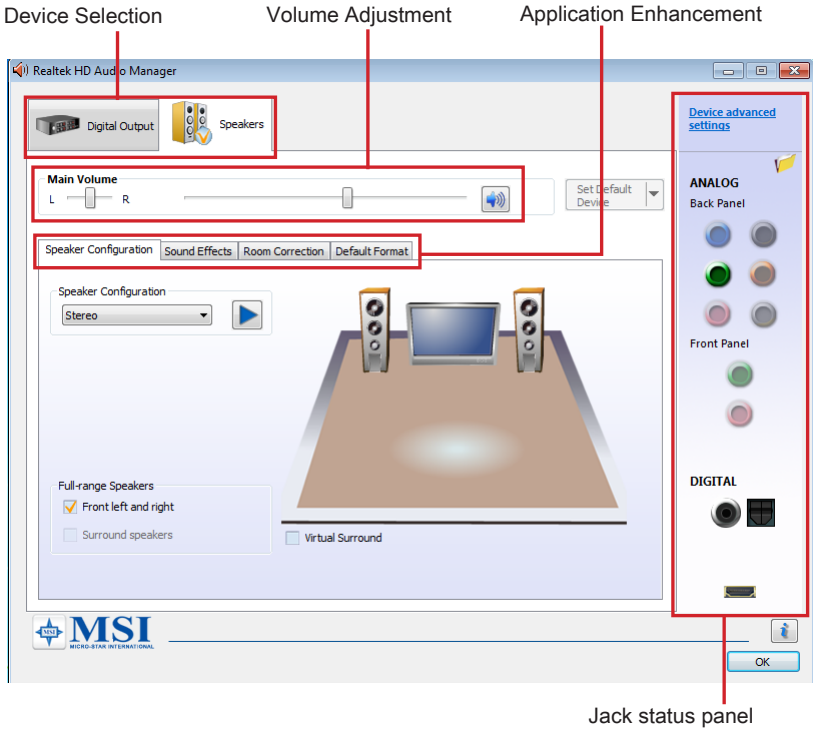
Software Configuration

After installing the audio driver, the “Realtek HD Audio Manager” icon will appear at the notification area (lower right of the screen). You may double click the icon and the GUI will pop up accordingly.

It is also available to enable the audio driver by clicking the **Realtek HD Audio Manager** from the **Control Panel**.

Software panel overview

The following figure describes the function of the Realtek HD Audio Manager panel.



■ Device Selection

Here you can select a audio output source to change the related options. the “check” sign (in orange) indicates the devices as default.

■ Volume Adjustment

You can control the volume or balance the right/left side of the speakers that you plugged in front or rear panel by adjust the bar.

■ Application Enhancement

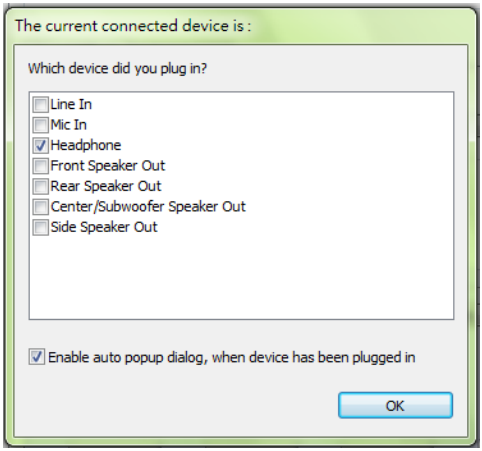
The array of options will provide you a complete guidance of anticipated sound effect for both output and input device.

■ Jack status panel

This panel depicts all render and capture devices currently connected with your computer. Additionally, more applications would be found at the option of “Device Advanced Settings”.

Auto popup dialog

When you plug into the device at the jack, a dialogue window will pop up asking you which device is current connected.

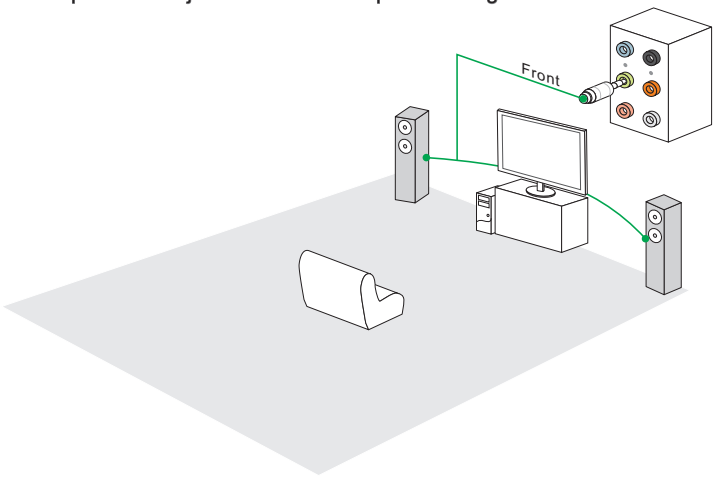


As you know, each jack corresponds to its default setting, you can refer to the next section “Hardware Default Setting”.

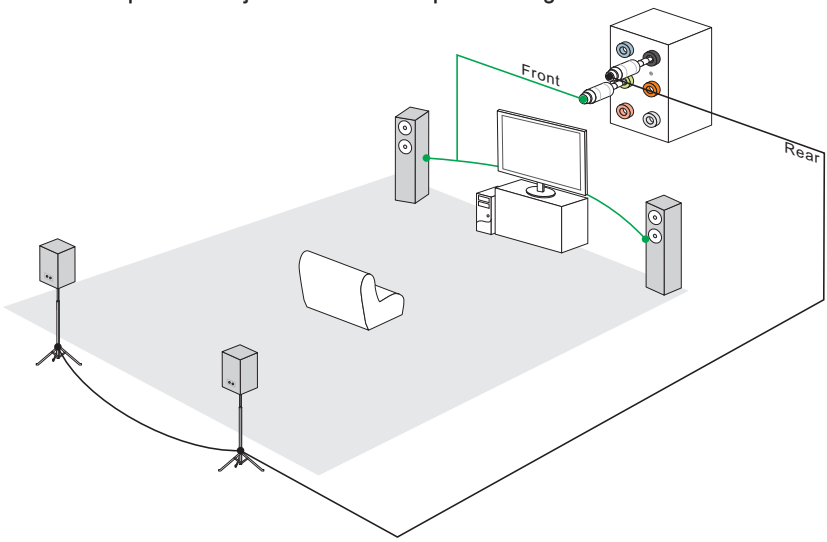
Hardware Default Setting

The following diagrams are audio back panel default setting.

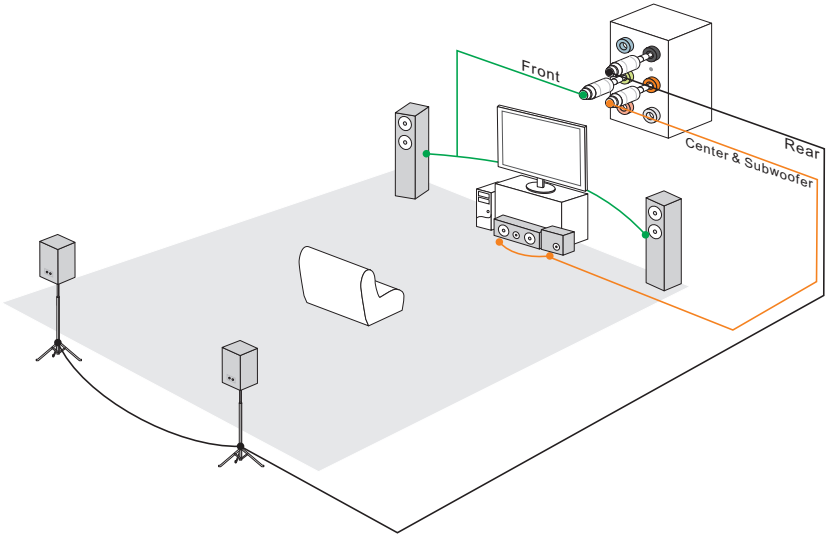
- **Backpanel audio jacks to 2-channel speakers diagram**



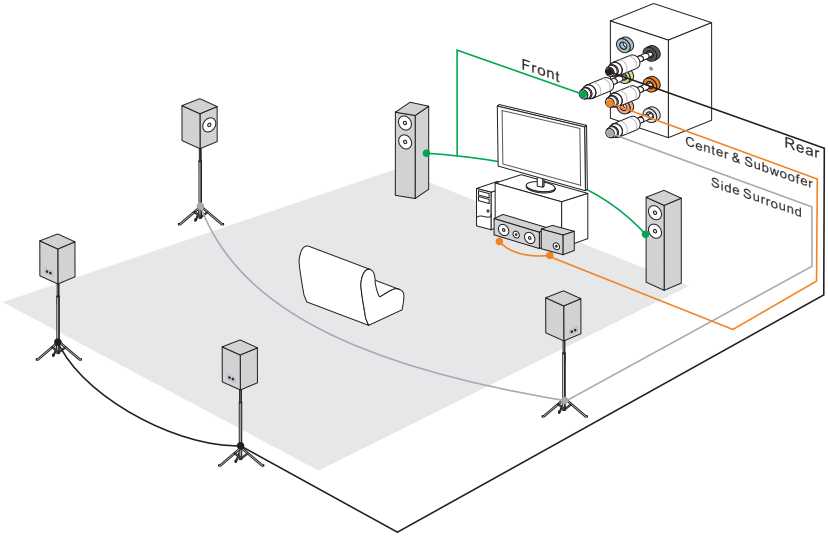
- **Backpanel audio jacks to 4-channel speakers diagram**

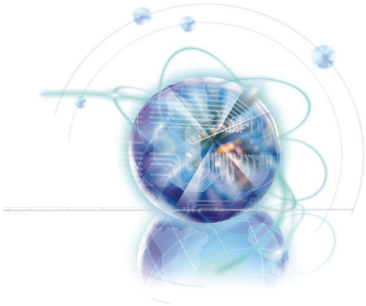


- Backpanel audio jacks to 6-channel speakers diagram



- Backpanel audio jacks to 8-channel speakers diagram





Appendix B

AMD RAID

The integrate one SATA host controller separately, and support RAID function for performance and reliability.

SB850 SATA RAID provides support for RAID 0 (Striping), RAID 1 (Mirroring), RAID 10 (Striping & Mirroring) & RAID 5 (striping with parity). RAID 0 greatly improves hard disk I/O performance by concurrently striping data across multiple drives. RAID 1 makes sure data is not lost if a drive fails as data is simultaneously written to two drives. Drives configured for RAID Striping are said to form a RAID 0 set, while drives configured for RAID Mirroring are said to form a RAID 1 set. RAID 10 is implemented as a mirrored array whose segments are RAID 0 arrays. RAID 10 has same fault tolerance as mirroring and reduces overhead by striping. It needs at least four drives to form a RAID 10. RAID 5 defines techniques for parity data.

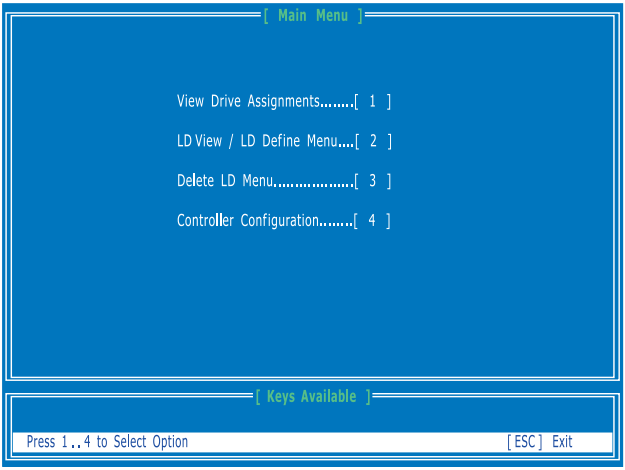
RAID Configuration

Creating and deleting RAID set and performing other RAID setting up operations are done in the RAID BIOS. During bootup, a screen similar to the one below will appear for about few seconds. Press <Ctrl-F> to enter RAID Option ROM utility.

Important

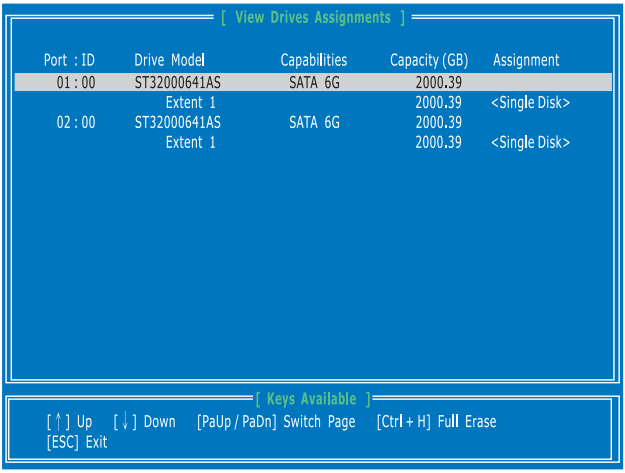
Be sure to enable the RAID function for SATA device in BIOS before configuring the RAID Option ROM Utility.

The RAID Option ROM utility menu screen will appear. The Main Menu is used to choose the operation to be performed.


[Main Menu]
View Drive Assignments.....[1]
LD View / LD Define Menu....[2]
Delete LD Menu.....[3]
Controller Configuration.....[4]
[Keys Available]
Press 1..4 to Select Option
[ESC] Exit

View Drives Assignments

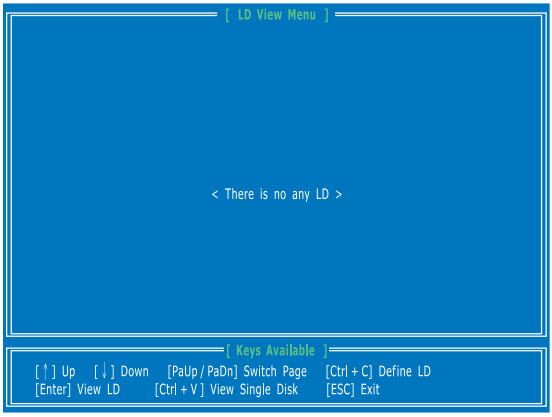
This window displays the model number, capacities and assignment of the drives physically attached to the SATA host adapter.



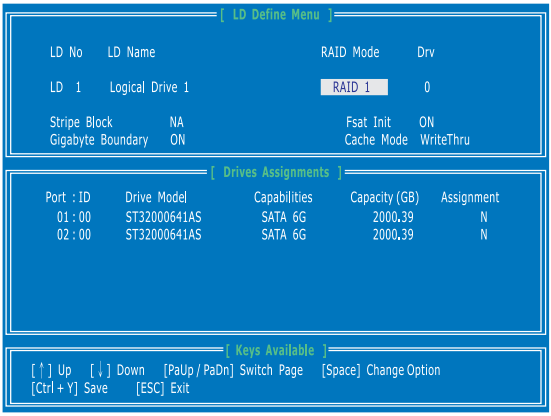
LD View / LD Define Menu (Creating RAID)

The selection of the RAID configuration should be based upon factors including performance, data security, and the number of drives available. It is best to carefully consider the long-term role of the system and plan the data storage strategy. RAID sets can be created either automatically, or to allow the greatest flexibility, manually.

1. Press 2 on the Main Menu screen to enter the LD View Menu.

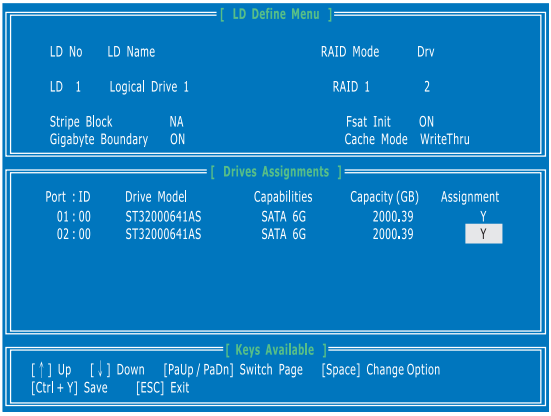


2. And then press [Ctrl + C] keys to enter the LD Define Menu. Use the space key to choose a RAID mode (RAID 0/ 1/ 10/ 5) and use the arrow key to move to the "Drives Assignments" window.

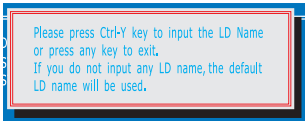

[LD Define Menu]
LD No LD Name RAID Mode Drv
LD 1 Logical Drive 1 RAID 1 0
Stripe Block NA Fsat Init ON
Gigabyte Boundary ON Cache Mode WriteThru
[Drives Assignments]
Port : ID Drive Model Capabilities Capacity (GB) Assignment
01 : 00 ST32000641AS SATA 6G 2000.39 N
02 : 00 ST32000641AS SATA 6G 2000.39 N
[Keys Available]
[↑] Up [↓] Down [PaUp / PaDn] Switch Page [Space] Change Option
[Ctrl + Y] Save [ESC] Exit

- Stripe Block Size, the default 64KB is best for most applications. RAID 0 or 10 only.
- Gigabyte Boundary, allows use of slightly smaller replacement drives.

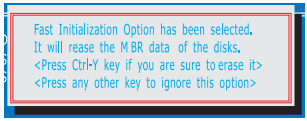
3. On the Drives Assignments window, use the arrow key to choose the hard drives which you want to make part of the LD, use the space key to change the assignment to “Y”. Then press [Ctrl+Y] to save the configuration.


[LD Define Menu]
LD No LD Name RAID Mode Drv
LD 1 Logical Drive 1 RAID 1 2
Stripe Block NA Fsat Init ON
Gigabyte Boundary ON Cache Mode WriteThru
[Drives Assignments]
Port : ID Drive Model Capabilities Capacity (GB) Assignment
01 : 00 ST32000641AS SATA 6G 2000.39 Y
02 : 00 ST32000641AS SATA 6G 2000.39 Y
[Keys Available]
[↑] Up [↓] Down [PaUp / PaDn] Switch Page [Space] Change Option
[Ctrl + Y] Save [ESC] Exit

4. A message will show, press [Ctrl + Y] to input a LD name as your desire or press any key to save default LD name.


Please press Ctrl-Y key to input the LD Name
or press any key to exit.
If you do not input any LD name, the default
LD name will be used.

5. Another message will show, press [Ctrl-Y] if you are sure to erase the MBR data of the disk. Or press any key to ignore this option.

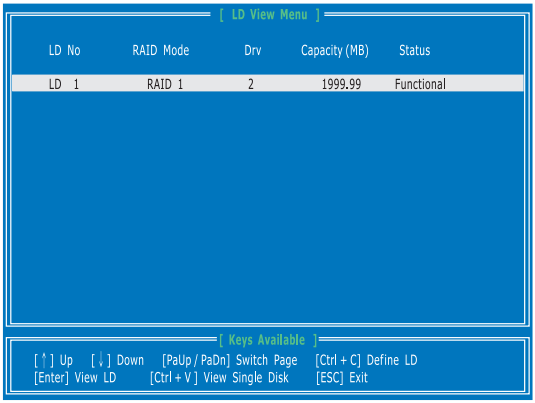


6. The message will show up on the bottom, press any key to use maximum capacity or press [Ctrl-Y] to modify array capacity manually.

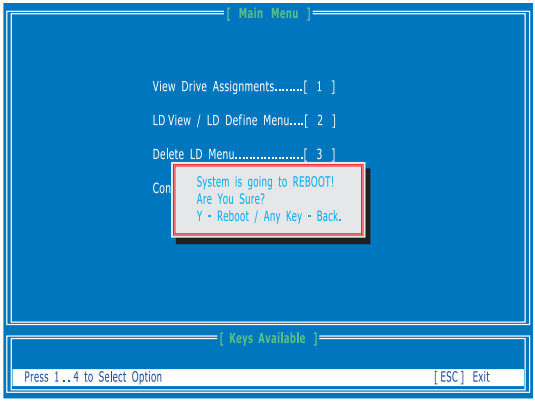
Important

- *The default capacity is the full capacity of the selected hard drives.*
- *If you allocate the first LD capacity manually, you can create second LD with remaining capacity of the selected hard drives.*

7. The LD creation is done, the screen shows the LD information as below.Press ESC key to the main screen.

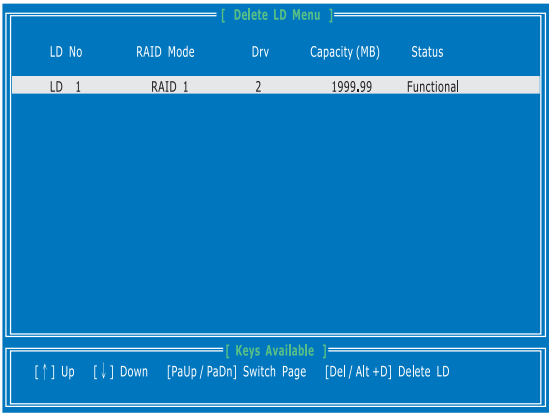

[LD View Menu]
LD No RAID Mode Drv Capacity (MB) Status
LD 1 RAID 1 2 1999.99 Functional
[Keys Available]
[↑] Up [↓] Down [PaUp / PaDn] Switch Page [Ctrl + C] Define LD
[Enter] View LD [Ctrl + V] View Single Disk [ESC] Exit

8. Press ESC key to exit the utility, a message “System is going to REBOOT! Are You Sure?” will display, answer “Y” to exit it and the system will reboot.

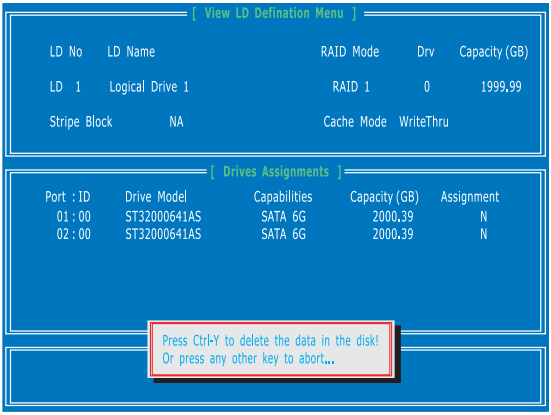

[Main Menu]
View Drive Assignments.....[1]
LD View / LD Define Menu....[2]
Delete LD Menu.....[3]
System is going to REBOOT!
Are You Sure?
Y - Reboot / Any Key - Back.
[Keys Available]
Press 1..4 to Select Option
[ESC] Exit

Delete LD Menu (Deleting RAID)

1. Press “3” on the main to enter the Delete LD Menu.
2. Choose a LD No. you want to delete and press [Del] or [Alt+D] delete the RAID set.



3. On the next screen, a message will display to inform you, press “Ctrl+Y” to delete the RAID set or other key to abort it. Press “Ctrl+Y” to complete the deletion.



Installing the RAID Driver (for bootable RAID Array)

1. After you complete the RAID BIOS setup, boot from the Windows CD, and the Windows Setup program starts.
2. Press F6 and wait for the Windows Setup screen to appear.
3. Insert the floppy that contains the RAID driver, press the “S” key to select “Specify Additional Device”.

   Note: for Windows Vista/ Windows 7, you can copy the files to a medium (floppy/ CD/ DVD or USB)

Important

Please follow the instruction below to make a SATA RAID driver for yourself.

- *Insert the MSI DVD into the DVD-ROM drive.*
- *Click the “Browse CD” on the Setup screen.*
- *Copy all the contents in the : \\ChipSet\AMD\Packages\Drivers\SBDrv\SB8xx\RAID\ (and then, please select a folder which was classified according to OS.)*
- *The driver disk for RAID controller is done.*

4. When prompted, insert the medium disk and press Enter.
   For Windows Vista/ Windows 7:
   During the Operating system installation, after selecting the location to install Vista/ Windows 7 click on “Load Driver” button to load RAID drive.
5. You should be shown a list of available RAID controller(s).
6. Select the compatible RAID controller for 32-bit/ 64-bit version system and then press ENTER.
7. The next screen should confirm that you have selected the RAID controller. Press ENTER again to continue.
8. You have successfully installed the RAID driver, and Windows setup should continue.
9. Leave the medium until the system reboots itself. Windows setup will need to copy the files from the medium again after the RAID volume is formatted, and Windows setup starts copying files.

Installing the RAID Driver Under Windows (for Non-bootable RAID Array)

1. Insert the MSI DVD into the DVD-ROM drive.
2. The DVD will auto-run and the setup screen will appear.
3. Under the Driver tab, click on AMD chipset drivers by your need. The AMD chipset drivers includes RAID Driver.
4. The driver will be automatically installed.